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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service



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The Week at a Glance

MORE WORK FOR LESS PAY: The railroads performed almost 100 per cent more public service in the first third of 1944 than they did in that period of 1929—but they earned for this double duty slightly *less* net operating income than in '29. The reason why the investors' property was worked so much harder, at reduced wages? Well, for one thing, average rates were lower this year (freight rates down 12 per cent and passenger fares reduced 36 per cent). Then, too, wages were 45 per cent higher; and taxes were up 354 per cent. Railroad performance—and the large and recent untoward increases in operating expenses and taxes—are analyzed in the leading editorial in this issue.

WHAT PASSENGERS WANT: General Passenger Traffic Manager Fred Baird of the New York Central has let it be known how he made out with the questioning of passengers which he undertook on a rather impressive scale not long ago. What he wanted to find out was the refinements which would likely improve the popularity of the service when there are more alternative means of travel around than at present. As reported in the news pages herein, the customers' demands are disclosed to be not unreasonable or revolutionary—but, pretty much, a further extension of the amenities which are already offered.

ARMY RELIANCE ON RRs: The North African campaign showed how hard it is to supply a big army by highway, a long way from its base of supplies—a point which had a lot to do with Rommel's defeat. Such is one of many significant and informative observations of an address, reported herein, by Major Stephen R. Truesdell—who reveals new details on the part which railroad transportation has played in the great victories won in the Mediterranean Theater. The Major also frankly discloses some of the difficulties encountered—engineering, operating, mechanical and stores. At the head of the trouble list he places the lack of knowledge of the French language by our forces—and quotes the British as recommending that, hereafter, railway troops receive instruction in the language of the country whither they are bound.

JOB INSURANCE CRITICIZED: The A. A. R. has issued a booklet, reviewed in our news pages, which gives critical analysis to the bill the railway unions have put into Congress—seeking to vote themselves further “social security” still beyond and above that accorded to any other class of Americans. One feature of the bill is a generous quantity of compulsory insurance for an employee's survivors—the expense laid one-half upon the railroads. Other Americans have to provide for their survivors at their own expense. The bill further would require the railroads to put up all the money to provide insurance of employees against sickness, in no way connected with their work on the railroads. Thus burdening the railroads with expenses from which

their competitors are absolved seems a queer way to strengthen their post-war job-giving power. Most of the brothers do not realize, apparently, that the number of jobs is indirectly proportional to wage rates (plus “benefits”). Wherein lies the justice in “social security” for railroaders far beyond that enjoyed by other Americans? Wherein lies its wisdom—from the standpoint of preserving employment?

2nd MILITARY RY. SERVICE: This is the name which has been given to the Army railroad units which will provide the supply lines for our invasion of the European continent. In command is Brigadier General Clarence L. Burpee, formerly A. C. L. superintendent at Jacksonville. A report in our “Railroads-in-War” news pages tells of the new military railway organization, and gives the names of the officers designated as General Burpee's aides.

SYNTHESIS: Many, and maybe most, people now gainfully employed were indoctrinated at home, at school, and at work on the advantages of specialization. Learn one job or profession or variety of work well, we were told, and the future would take care of itself. There is, indeed, a great deal of truth in such an observation—but it isn't quite the whole truth. No specialist's work is much good, standing by itself. There have to be men who know how to take the parts that specialists produce and put them together into a usable whole. The men who do this job are, in industry and transportation, the top management. An editorial herein cites testimony of one department after another—how it can do its job creditably only to the degree that its problems are understood by the chief executive. The duties of the head of a successful organization are manifold and increasing; and, it is suggested, well-distributed attention to all departments (i.e. synthesis) may often be more productive than concentration upon those whose operations are familiar.

TRAFFIC PROSPECTS: The shippers' boards have put in their traffic estimates for the third quarter (tabulated in the news pages). They are, in the aggregate, looking for a loadings increase less than one per cent above the third period last year. Six of the districts expect slight decreases. The biggest increase looked forward to in any section is 5 per cent, on the Pacific Coast.

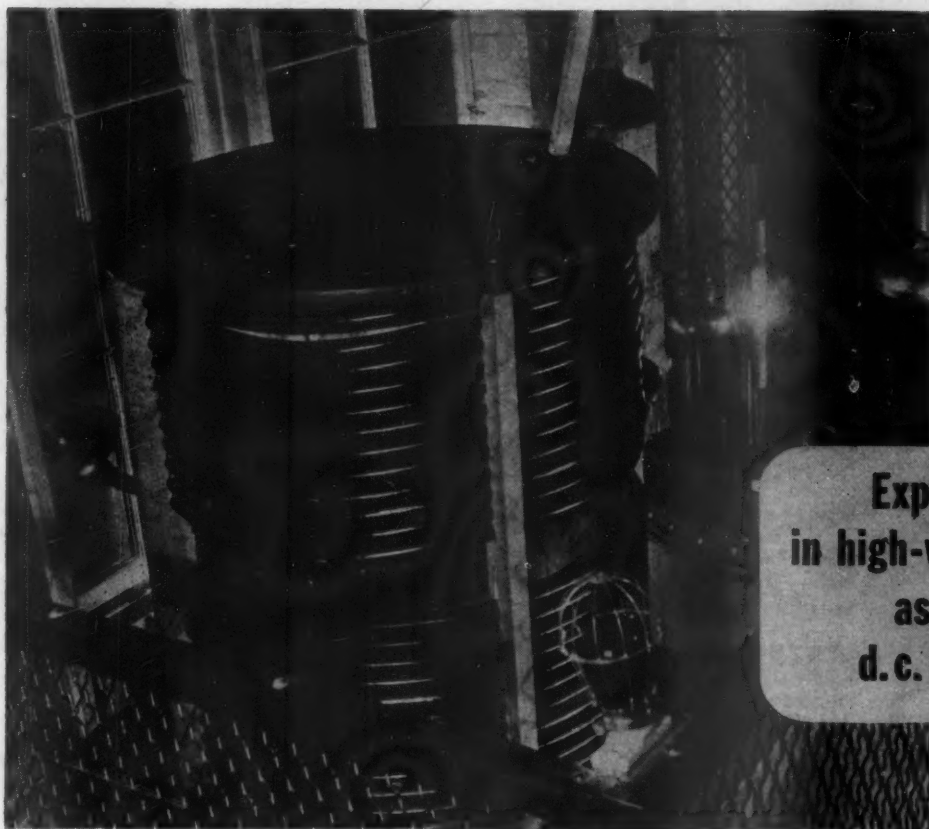
FIVE MONTHS' EARNINGS: Operating revenues up till the end of May were about \$3.8 billion, as compared to \$3.6 billion for the first five months in '43—the increase being 6.6 per cent. But the owners and creditors are not getting any benefit from this larger patronage. Quite the contrary. Net railway operating income in the five months was \$452 millions this year, as compared to \$603 millions last year—a decrease of about 25 per cent. Further details are set forth in the news pages. The rate of return the railroads earned on their investment in the 12 months ended May 31 was 4.5 per cent—which most lines of business would consider a pittance rate of profit.

THE ELECTION ISSUE: Those who are tired of freedom and wish to yield the say-so over an ever-growing area of our economic and social life to the whims of a perpetual executive (whether he be called President or King or Duce—the name doesn't matter) will, of course, vote for the New Deal candidates in the elections this fall. Those, likewise, who dislike to draw their incomes from the patronage of willing customers and prefer to keep on getting their living from checks issued against an ever-mounting federal debt—leaving their children and remote descendants to pay the penalty of their improvidence: these also will exercise their franchise in behalf of the New Deal. An editorial herein suggests that the New Deal candidates will, conversely, not be the selection of those whose preferences run to the time-honored American political and economic principles whose foremost *foreign* enemies are being chastised by our armed forces. Railroad managements, as such, have no politics, but railroad men as individuals have not yet lost the right to give effect to their political preferences at the polls.

IMPROVED USE OF METALS: Two metallurgists from the Battelle Memorial Institute, in a paper published herein, take up the various parts of cars and locomotives one by one—and suggest what improvements are possible in each of these (in design, in fabrication, and in performance) by applying recent advances in metallurgical materials and processes.

FAVORS BIGGER TRUCKS: The constituent bodies of the U. S. Chamber of Commerce have adopted the recommendation of the Chamber's transportation committee that the federal government coerce the states into accepting on their highway systems trucks of any magnitude that federal bureaucrats may be induced to specify. This is a peculiar doctrine to issue from a body of men who usually orate feelingly in opposition to the extension of centralized political power. This action, advocated by these brave defenders of local rights, is analogous to a ruling by the I. C. C. that would force every jerk-water railroad branch line to be reinforced to accommodate the largest main-line locomotives. Our estimation of the candor and economic and political competence of the Chamber of Commerce on transportation questions was set forth in our May 13 issue, page 885; and the disingenuous and highly successful propaganda for political maximization of truck sizes—before which onslaught the Chamber has capitulated—was analyzed in last week's issue, page 2.

PUBLIC RELATIONS TRAINING: Vice-President L. W. Horning of the New York Central, in a short article herein, gives some further interesting details on that company's highly-successful and rapidly-growing educational program for equipping employees to deal skillfully and understandingly with the public. Of particular usefulness is his listing of educational leaders in the several states who stand ready to provide similar instruction for other railroads.



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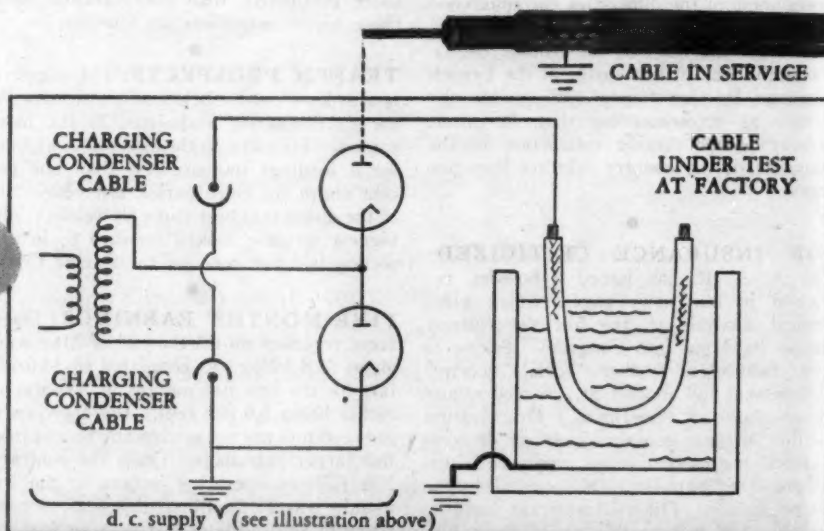
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RAILWAY AGE

The Railway Record Up to Date

The nation's railways had to render about 100 per cent more freight and passenger service, and make \$1,036 million more gross earnings in the first third of 1944 than in the first third of 1929, to make approximately the same net operating income. Gross earnings in the first third of 1929 were \$1,996 million and in the first third of 1944 were \$3,033 million. Net operating income in the first third of 1929 was \$353 million and in the first third of 1944 was \$350 million.

The Railway Record, First Thirds of 1929, 1943 and 1944

	1929	1943	1944
Total traffic units (freight & passenger)....	128,000,000,000	225,000,000,000	250,000,000,000
Gross earnings	\$1,996,320,000	\$2,839,700,000	\$3,032,541,000
Operating Expenses	1,475,467,000	1,724,140,000	2,032,544,000
Net Revenue from Operations	520,853,000	1,115,597,000	999,997,000
Equipment & Joint Facility Rentals	38,403,000	62,075,000	63,657,000
Taxes	128,610,000	579,786,000	586,056,000
Net Operating Income	353,440,000	473,735,000	350,285,000

The statistics given in the accompanying table show very graphically the changes that have occurred under the pressure of war demands for increased service, lower rates, higher wages and higher taxes. In the first third of 1943 total units of traffic (freight and passenger) handled were 80 per cent greater than in 1929, and every figure representing railway results was larger, including net operating income, which was 34 per cent larger.

With much less equipment available than in 1929, it was considered that the railways with the co-operation of shippers worked almost a miracle in 1942 and 1943. Their achievement in rendering service thus far in 1944 has been still greater; but the financial results they have secured for themselves have been less favorable. The service (freight and passenger) rendered by them in the first third of 1944 was not only about 100 per cent greater than in the first third of 1929, and 60 per cent greater than in 1942, but also 10 per cent greater than in 1943, and caused an increase in their gross earnings of about 7 per cent compared with 1943. The continued increase in service in 1944 would have caused some increase in operating expenses anyway; but the increase in expenses has been principally due to the advance in wages granted late in 1943.

In the first third of 1942 operating expenses were still less than in 1929; but in the first third of 1944 they were \$558 million larger than in 1929; \$630 million larger than in 1942 and \$308 million larger than in 1943. Principally owing to the increase of operating expenses, and partly owing to continued increase in taxes, net operating income was reduced from \$474 million in the first third of 1943 to \$350 million in 1944, a decline of 26 per cent.

The fact that the railways rendered the public about twice as much service in the first third of 1944 as in 1929, and yet earned slightly less net operating income (return on investment) is significant. One important reason is that apparently they are the nation's only large industry which is being paid lower rates or prices than before the war, or even before the depression. Their average revenue per ton-mile in the first quarter of 1944 was 12 per cent less than in 1929; their average revenue per passenger per mile, 36½ per cent less.

What other large industry can show that it is (1) paying its employees an average hourly wage 45 per cent higher than in 1929, (2) is paying 354 per cent more taxes, and yet (3) is receiving substantially lower prices or rates for its goods or services? The wholesale prices of every large group of commodities are now higher than before the depression, the average increase in all over 1929 being 7 per cent. If railway revenue per ton-mile had increased relatively as much, it would have been 20 per cent higher than it was in the first third of 1944, and railway freight revenues in that one third would have been \$452 million greater than they were.

Efficiency
FOR VICTORY

Top Management's Growing Responsibilities

President W. M. Jeffers of the Union Pacific, in his brief remarks last week on acceptance in behalf of his organization of the Harriman safety award, observed that success in improving safety usually has its origin in top management. He did not mean that top management itself produces or deserves the credit for high ratios of safe operation; the actual safe performance is an accomplishment of the men in the ranks. The whole organization, however, takes its cue from the management on policies and objectives to be primarily emphasized, and, if safety is a foremost goal at the very top of an organization, efforts to attain that goal are quite likely to be a major concern throughout the whole enterprise.

A similar estimate of the importance to satisfactory safety of operation of an understanding interest therein by top management, was expressed at the recent regional safety congress at Kansas City by E. L. Duggan, safety superintendent of the Santa Fe, whose observations were reported in our June 24 issue, page 1207.

Railway public relations officers have frequently expressed their dependence for the success of their work upon the attitude and understanding of the chief executive. The report on public relations by the A. A. R.'s Railroad Committee for the Study of Transportation says: "Responsibility for the railroad's relations with the public is and must be that of the chief executive officer. He alone is in a position to give direction to the policy of the entire organization as it affects these relations."

In an article in the current issue of the *Quarterly Journal of the Society for the Advancement of Management* the following observation is made:

"Good industrial relations must stem from the top and be an important part of a corporation's personality. This fact seems so obvious that I would hesitate to elaborate on it, were it not for the fact that the pressure of the many other problems facing management today leaves so little time for thought and analysis that many managers do not give much time to the development of a philosophy for dealing with people. It is a little too easy for them to say, 'We have an industrial relations or a personnel department. That's their problem.'"

Probably every specialized department of a railroad or other industrial organization would echo such testimony as the foregoing. That is, if the chief executive comprehends a department's problems and gives the department his understanding support (insofar as specialized departmental interests harmonize with the welfare of the organization as a whole), the chances are, if the department is in capable hands, that it will do a good job. Without such sympathetic understanding by the chief executive, any department is behind the eight-ball—from which position downright genius on the part of its managers can scarcely hope to rescue it.

These facts emphasize that wholly successful and well-rounded leadership of a large-scale enterprise—especially a railroad—impose upon a chief executive today de-

mands that are almost intolerable in their magnitude and variety. A chief executive usually comes up through one department, and cannot hope to attain expert knowledge of, at best, more than two or three of them. He may, and probably will, do a better job for the enterprise as a whole, if he carefully selects heads for all departments who are experts regarding their work, and then devotes his attention partly to attaining a better grasp of the duties and problems of those departments with which he is least acquainted, but mainly to coordinating and stimulating the activities of all departments.

No department or branch of a department on a railroad is a "necessary evil." If it is necessary, it is not evil—and its existence argues need for it. And the better its functions are understood by top management, the greater its contribution to the success of the enterprise will become. Gradually, the conception by top management of its duties as an understanding harmonizer of all departments and a champion of no particular one, is growing. There is need for specialization in an organization—but there is also an equal, but often inadequately realized, need for synthesis. When—in industrial management, in politics, in international relations—as much emphasis and value is placed upon competent synthesis as is now accorded to specialization, we may begin to get a diminution in the intolerant and ill-informed divisiveness which is now tearing industry, nations, and the world asunder.

Vitally Important Issues on the Home Front

It is to be hoped that the war and discussion of the nation's post-war foreign policies will not prevent adequate discussion of the domestic issues involved in the national political contest now begun. The war will be conducted to a successful conclusion by our military leaders regardless of which party wins; and the domestic questions with which the American people are confronted are of vastly more importance to them than any differences there may be regarding foreign policies. The decision of the election regarding these domestic issues will largely determine how much political and economic freedom, progress and prosperity the American people will in future enjoy at home, and, therefore, how strong the nation will be and how much help it can give in restoring safety, freedom, order and prosperity in the rest of the world.

The fundamental domestic question presented is whether we shall establish here, by accepting New Deal policies, the totalitarianism we are fighting abroad, or shall adopt policies that will restore the political and economic freedom established by our federal Constitution, and revive the progress and prosperity that usually prevailed under it for a century and a half. Many feel lukewarm toward both the Republican and Democratic parties; but nobody can have any good

reason now for not giving energetic support to the candidates of one party or the other. For, in spite of inconsistencies on both sides, the two parties now stand and are fighting for policies that are fundamentally opposed. President Roosevelt and other New Dealers have created the vitally important domestic issues with which we are confronted. They began creating them in 1933 by the passage and administration of the National Recovery Act. That act contained two parts, the significance of which can be much better realized in view of what has occurred in the subsequent eleven years.

One of these parts provided for establishing monopolistic agreements regarding prices, wages, hours of work and fair trade practices under which agreements government, business and labor would be "partners." In every such "partnership" government was sure to dominate, as it did. This part of N. R. A. was killed by the Supreme Court in 1935; but government has continued ever since to increase its domination of business. Another part of the act appropriated \$4 billion to be spent by the government in "priming the pump" of business and providing employment. This was the first appropriation ever made in this country upon the theory that private enterprise must be helped, even temporarily, by huge government spending to provide adequate production and employment. Since then the theory that private enterprise cannot provide enough employment, and must be permanently helped to do so by huge government spending, has become the most important doctrine of the New Deal.

Another development of the utmost importance has been the successful candidacy of President Roosevelt for a third term, followed by his current candidacy for a fourth term. He and his supporters have thus adopted the principle of the indefinite continuance as head of the government of the "indispensable" man—a principle previously always repudiated in this country because of its unbroken tendency in other countries to lead to dictatorship.

All the developments mentioned—substitution of government domination of business for free private enterprise; huge government spending, ostensibly to provide employment, but increasingly in competition with

Legal, Seemingly—But How Wise?



A Novel Means of Enlisting the Services of People Whose Ministrations Are Requisite to Railroad Well-Being

private enterprise; indefinite continuance of one "indispensable" man as head of the government—are revolutionary, and tend, and apparently are intended, to replace the political and economic system we had until 1933 with some such political and economic system as has been called Communism in Russia, Fascism in Italy and Nazism in Germany. Citizens who earnestly desire full post-war restoration of political freedom and free enterprise have no recourse excepting active support of the national candidates of the Republican party.

It was long not customary for business papers such as *Railway Age* to participate in the discussions of political campaigns. But never before the present administration came to power did the issues in any such campaign involve the future of the entire American political and economic system, including, of course, the future of the railways as an important part of that system. The railways must carry on, under either private or government ownership, within the framework of the general political and economic system which those elected by the people adopt. The railways' volume of post-war traffic and gross earnings, and the employment they can directly and indirectly give, will depend principally upon the volume of goods produced and distributed by other industries, which, in turn, will depend largely or principally upon the opportunity afforded by government to private enterprise in other industries. The railways and their

employees will suffer more than any other industry and its employees from the government subsidized competition with numerous industries that will prevail if a policy of huge government spending is followed. Railway profits and employment will be adversely affected at least as much as those of any other industry if government follows policies causing excessive labor costs and excessive taxation.

In brief, the railways and their employees have as much or more reason to fear and oppose New Deal policies as any other industry and its employees. Railway labor unions may participate in the political campaign; railway management will not; and nothing that the *Railway Age* may say should be construed as expressing the attitude of railway management. But the stockholders of the company that owns *Railway Age* and other publications which serve the railway, building and marine industries have the same concern regarding national government policies as other American citizens. Therefore, these publications intend to exert whatever small influence they can in behalf of candidates who commit themselves to policies tending to arrest the trend in this country toward Nazi state socialism.

Salt Cures Heat Cramps

We are now in the midst of the season of high temperatures and prolonged hot weather. During this period many persons will suffer from heat prostration and sunstroke. To many, these terms are synonymous; yet they are entirely distinct in both their causes and their effects, despite the fact that they seem to spring from the same cause, since both occur during hot weather and usually to men doing heavy muscular work.

Sunstroke occurs among persons exposed to the direct rays of the sun, which apparently disturb the heat-regulating mechanism of the brain to such an extent that it does not function correctly, allowing the body temperature to rise rapidly. The immediate requirements in this case are to get the patient out of the sun, loosen his clothing, reduce the body temperature without causing shock and get him under the care of a physician as quickly as possible.

On the other hand, heat prostration may attack a person, in either the field or the shop and while exposed to the sun or protected against the direct action of its rays, who is exerting considerable muscular effort in a heated atmosphere; and it is more likely to occur if the humidity is high. The cause of heat prostration, heat cramps or heat exhaustion, as it is sometimes called, is excessive sweating, with consequent loss of water and salt from the body. The attack may come on suddenly with practically no warning, or it may develop slowly.

If the attack comes on suddenly, it will be accompanied by severe cramping pains, which usually appear first in the legs, then in the arms and abdomen. If the attack develops slowly or is mild, the first symptoms

are a loss of energy, an increasing sense of fatigue, a general let-down in effort and a tendency to do things the wrong way. Unless treatment is given, this stage will be followed by a feeling of nausea and weakness, then by dizziness, rapid pulse, rapid respiration and, later, the muscular cramps will appear.

In contrast with sunstroke, the remedy is simple and easily applied, and recovery is rapid. Since the principal cause of heat prostration is loss of salt through long-continued or excessive perspiration, the remedy is to restore the salt thus lost. In mild cases or in the early stages of those that come on slowly, restoration of the salt that has been drained from the tissues will be all that is required. In fact, until the nausea appears, and in some cases after the cramps begin, the attack can be arrested in a matter of minutes by administering salt orally, and in severe cases intravenous injections of salt solution will bring prompt relief. After an attack, the patient should be kept quiet for 24 hours and on a strictly milk diet.

Heat prostration will be aggravated by the use of alcohol habitually or shortly before or shortly after the attack. One who is suffering from loss of sleep, from too little rest or from under-nourishment, is prone to more severe attack than one who is rested and well-nourished. Many forms of illness also aggravate heat prostration, such as colds, diarrhea or others that are accompanied by loss of fluids.

It is becoming increasingly the practice to provide salt tablets for both shop men and those who work out of doors. If taken with each drink of water, heat prostration will be prevented. As yet, few roads make the use of such tablets mandatory, as many manufacturers do, but many make them available to those who will use them. With so simple a preventive, there is no excuse for heat prostrations.

Safety on the Rails

An occasional fatal railway wreck, like that which befell the Santa Fe Chief near Williams [this week], should lead no one to suppose that American railroads are breaking under their wartime loads. The contrary is true. The American Museum of Safety underlined this fact the other day when it presented the E. H. Harriman medals for safe operation to the eastern district of the Union Pacific, the Charlestown & Western Carolina and the Duluth, Missabe & Iron Range, with a special award to former President Charles E. Carlson of the latter line. In addition, the museum gave a special certificate to American railroads as a whole, the Santa Fe, with its good record of tremendous traffic well handled, among them.

Safety for the overwhelming mass of passengers and crews has been achieved by the unswerving devotion to duty of railroad employees, from call boy and track walker to president. There were some deplorable wrecks upon railroads during 1943, which brought the passenger fatality rate up from 2.05 per billion passenger-miles in 1942 to 2.97 last year, but this was more than offset by the fact that there was an increase of 64 per cent in passenger-miles operated. The employee fatality rate dropped 7 per cent in 1943 as against the previous year, in spite of an increase of 30 per cent in man-hours. . . .

—From the New York Times



With the Military Railway Service in North Africa (Photo by Sgt. J. Hansen, U. S. Signal Corps.)

War Railroading in Africa, Italy

The job which was put up to Army railroaders, some of the troubles encountered, and how they were surmounted

By Major Stephen R. Truesdell,

Executive Officer, 709th Railway Grand Division

THE North African campaign was initiated to drive the Axis Armies from Africa and free the Mediterranean as a route for supplies to the Near and Far East. Axis domination at the time reached from Alexandria to Dakar and threatened South America and Egypt. The Allies were being forced to transport supplies around the Cape of Good Hope (6,000 miles or 50 days round-trip time longer) to Alexandria for the British 8th Army, which was feverishly building up supplies to stop Rommel, and to the Persian Gulf for Russia, then desperately defending Stalingrad.

It was also an important consideration that Africa would be used as a base for invasion of the "soft" under-side of Europe, taking advantage of the fact that with Spain prostrate, and France an unwilling Axis partner, Italy could be forced out of the war, and that Turkey and the Balkan guerillas could be encouraged to friendly neutrality or open rebellion. The principal objective of the Mediterranean campaign has been accomplished and approximately two million tons of most essential

shipping have been added to the Allied cause by the shortened route. This may or may not have been the decisive factor in the turn of fortune in the Russian theatre since the winter of 1942-43.

A Big Army Can't Be Supplied by Road

The entire North African campaign furnishes an excellent example of the value of rail transportation, or rather the difficulty of waging successful war without it. Under the mistaken opinion which had prompted Germany to build 3,000 miles of strategic "Autobahnen" just before embarking on this motorized second World War, Italy had put its faith in a 1,100-mile strip of two-way black top pavement to support an army of over 100,000 men in Lybia. This required the movement of about 3,000 tons of supplies per day over the road, in addition to tanks, ambulances, artillery and all other impedimenta. The see-saw that developed was due to inability of either army, when extended to the limit of its supply line on this road, by the use of all of its transportation vehicles, to accumulate sufficient material to deliver the knockout blow. When Gen. Alexander finally secured an overwhelming supply of material and suf-

NOTE: This article is the substance of an address delivered before the American Association of Railroad Superintendents in Chicago on May 9. Major Truesdell has recently returned from North Africa and Italy, where he served as adjutant to Brigadier General Carl R. Gray, Jr., director general, Military Railway Service.

ficient American motor trucks, plus the use of water transport along shore, he was able to rout Rommel—and the interference of the Allied Forces with Rommel's supply line through Tunisia prevented his recovery at any later date in this retreat.

The Invasion of North Africa

The ports at which over 100,000 troops of the North African invasion force were landed on and after 2 a. m. November 8, 1942, were Casablanca and Oran for the U. S., and Algiers for the British. Later other smaller ports were used to land supplies in a lesser degree. All of these ports were modern and equipped with harbor facilities, undamaged and capable of unloading heavy equipment. Connecting them, parallel to the coast from Casablanca to Tunis, were a single track railroad and a paved highway 1,400 miles long. [A railroad map of North Africa appeared in the *Railway Age* of November 14, 1942, page 775]. These two, rail and road, lay from 40 to 50 miles south of the Mediterranean coast. Each was supplemented in part of the distance by short parallel branches. Since Oran and Algiers were on the coast, they were connected to the main line by short double-track wye connections, but all trains ran in and out of these terminals. The total mileage of standard and narrow gage rail lines in the connected North African systems, and at one time administered by the Director General, Military Railway Service, was 5,045.

The railway main line was standard gage, with 92-lb. rail on steel ties and rock ballast, with concrete and steel bridges. Except for short portions in Tunisia and the narrow gage lines in southern Tunisia, there was no war damage. Grades, curves and tunnels were plentiful and restrictive, but the track was superior. It was operated by three companies—the Chemins de Fer du Maroc, Chemins de Fer Algériens, and Chemins de Fer de Tunisie, all government-owned, the first by the Moroccan government and the last two by the French government. In addition, there were some independent narrow gage phosphate railroads in Tunisia extending from Sfax to Gafsa and Gabes. The parallel highway was in constant use by military vehicles, staff cars, motor convoys, etc., but was incapable of accommodating much in the way of traffic in food and munitions. It was well constructed, of asphaltic macadam, about 18 ft. wide, but with sharp turns and grades which restricted speed.

The railroad systems were operated at the time of the invasion by civilian forces, which, by law, came under the jurisdiction of the French Military when they threw in their lot with the Allies. Preliminary estimates of the tonnage needed for the African campaign were 500,000 tons per month through the ports listed above and requiring, on the part of the U. S., for full main line operations, 5 railway grand divisions, 6 shop battalions and 25 operating battalions. Instead, there landed with the troops, part of the 703rd Railway Grand Division and the 761st Railway Transportation Company from England. These were followed by the 727th Railway Operating Battalion and two-thirds of the 753rd Railway Shop Battalion in December, and the 703rd Railway Grand Division, three companies of the 753rd Railway Shop Battalion, and the 713th Railway Operating Battalion, with Brigadier General Gray and an advanced detachment of Hq. M. R. S. in February, 1943.

The French railways, with their manpower affected by internal dissension and their equipment in a bad state of repair, were rapidly falling short of requirements and the above units, even with the delivery of

new U. S. locomotives and cars, were insufficient to support military operations on the scale planned for supplying an army of 500,000 men. Consequently, more units were asked for at once, and the remainder of Headquarters, Military Railway Service, the 701st and 704th Railway Grand Divisions, and the 715th, 719th and 759th Railway Operating Battalions arrived in May. With the arrival of these units, the U. S. Military Railway Service troops in North Africa totaled 5,700. The British Military Railway forces brought in a total of some 1,250 men, which were distributed on the line supporting the British First Army in Tunisia from the ports of Bone and Tabarka.

The U. S. Military Railway Forces were distributed: The 701st Railway Grand Division to supervise and assist the Moroccan Railway operating to Oujda; the 761st Railway Transportation Company operating between Oujda and Oran, and the 753rd "C" or Car company assembling U. S. freight cars on the docks at Oran. The 704th Railway Grand Division, with the 759th and 719th Railway Operating Battalions, were operating from Oran through Algiers and Constantine to Philippeville, with the 753rd Railway Shop Battalion operating the locomotive shops at Sidi Mabrouk (Constantine), repairing French locomotives and assembling narrow gage 2-8-2 U. S. locomotives for use between Ouled Rahmoun and Tebessa and on the narrow gage lines in the theatre of operations in southern Tunisia, where the 727th Railway Operating Battalion was supplying and moving the U. S. troops of the 2d Corps on the narrow gage line. The 715th Railway Operating Battalion had charge of the line from Kreubs at Constantine to Bone and Ghardimaou, connecting with the British 1st Railway Operating Group at the latter point. The 713th operated from Ouled Rahmoun at Constantine to Tebessa and Oued Keberit, later moving to the narrow gage lines in Tunisia when the 727th was pulled out for the Sicilian campaign in June, 1943.

The first task of Brigadier General Gray in February, 1943, was to gather the Military Railway forces under one control. General Order No. 19 A. F. H. Q., dated February 14, 1943, placed the Military Railway forces, both British and U. S., under Director General Gray, who was assigned to the Allied Force Headquarters. He was also given responsibility for technical development and operation of all railways in North Africa for military purposes. As the French railways are under military government in time of war, use of the railways by the Allied Forces was a matter of negotiation with French military and civilian forces. A further matter of conflicting authority arose from the fact that the railway units in the theatre had been attached for administration and supply to the three base sections in North Africa. Railway operating forces at work from 24 to 48 hr. running trains, were being called for daily drill and classroom instruction periods, which were impracticable. This was finally resolved in October, 1943, by placing the administration of all railway forces under A. F. H. Q. through the Director General.

Traffic Handled

The campaign in North Africa was in three stages; first, the advance in Tunisia up to the surrender of the Axis forces, second the return of ground forces to training and refitting areas, accompanied by the building up of air force bombing activities from fields in Tunisia, and third, the movement of troops and supplies to ports for the Sicilian and Italian campaign. The period since November, 1943, has been one of gradual withdrawal

of the air force, ground force, and supply activities on the North African side of the Mediterranean, with a consequent reduction in M. R. S. operation there.

During the Tunisian campaign, the U. S. Military Railway Service was supporting the forward movement of the 2d Corps until that Corps was moved north of the British First Army in mid-April. Because of duplication, it is impossible to state exactly what tonnage was moved for military purposes to North Africa and by rail to the combat area, but the total net tons moved per day between Oran-Algiers, Algiers-Constantine, Constantine - Philippeville, the Bone-Duvivier in January, 1943, was 2,300; in February 2,700; at the peak of the Tunisian campaign in mid-April and including the movement of the U. S. 2d Corps, it was 3,900, and in June, with the return of combat troops to training areas, the setting up of the Sicilian campaign, and the supplying of air force bomber fields in Tunisia, was 5,300 tons daily. From this peak tonnage began to decrease, and in July it was 4,900 tons per day. The narrow gage lines southeast from Ouled Rahmoun to Tebessa, which were handling 250 tons per day on February 1, 1943, were handling 400 tons in mid-February, 1,200 tons in mid-March, and 3,000 tons in mid-June, and then decreased gradually with the reduction in troops and air force activities in that sector. These lines were operated entirely by American troops and methods.

Passenger service during the campaign consisted of two trains weekly out of Algiers east and west, operated on freight train schedules. These trains were packed with Arabs, civilian French, soldiers on furlough, and others, and the time was so slow that at each station when the train stopped it was like opening the door of a chicken coop. In addition, once a week, a "Rapide" or express train, operated between Casablanca and Algiers, 850 miles in 24 hours, with three changes and one customs inspection en route.



British Combine Photos

ABOVE: This Highway Bridge North of Littoria Station Was Blown Up by the Master Race as They Withdrew Before the Fifth Army's Advance in Italy—Practically Every Bridge and Overpass in This Area Was in This Condition When Allied Soldier-Railroaders Took Over. **BELOW:** What the Railroad Tracks Looked Like Near Cassino Station After the Nazis Had Been Driven Out



Being superimposed on the French civilian operations, the U. S. and British forces had much difficulty adapting themselves to French timetables, operating rules and signals. At first each U. S. crew had to be accompanied by a pilot crew, engineer and conductor, with whom

they had difficulty conversing. There were many complaints of coercion by the U. S. crews, all of whom bore side arms. These complaints were probably somewhat justified as the French methods were difficult for the American G. I. railroader to understand.

The French timetable is a "string" timetable, setting up rigid "marches" or "paths" for each train, with long meets at passing points, whether there is an opposing train or not. During this standing time, the train is under the entire control of the "chef de gare," or station-master, at that point. Even though the telephone system was of the very latest type, it was not used as in this country for dispatching. As a result, the fastest schedule for the 254 miles from Oran to Algiers, when the U. S. troops arrived, was 24 hours, of which 6 to 8 hours were scheduled standing time at meets. This was reduced by negotiation to 18 hours in June, 1943.

The French train rules, hand signals, and train signals were different from the U. S. types and the U. S. engine crews were put through a school and qualified on the French system and methods. When qualified they were permitted to operate without further pilots. A great deal of the operation was at night without headlights, as none of the U. S. standard gage locomotives were so equipped until lights were installed later by robbing the narrow gage engines.

Much of the French equipment lacked air brakes and was supposed to be tended by Arab brakemen, who applied hand brakes on whistle signal from the engine. This was an unreliable system at best and, since it was almost impossible to get trains made up with the air-braked cars at the head end, most of the braking was done on the engine, leading to shelled tender wheels and slipped driver tires.

In operation, the tonnage of military and civilian supplies to be moved was set by the G-4 Movements and Transportation Section of Allied Force Headquarters, giving first priority to G-3 Operational Movements. The capacities of various rail lines having been established by G-4 Movements and Transportation Rail Section on estimates based on train tonnage and power and personnel available, a weekly forecast was made of the total capacity available and this was allocated at a weekly priority of movements meeting at A. F. H. Q. by bids from the various services.

Once the tonnage allocation had been awarded to the various services, these were further allocated in District Movement (Rail Traffic Officers) daily meetings to allot tonnage for movement the following day. All such district officers were connected by direct phone to A. F. H. Q., G-4 Movements and Transportation for daily control and reports of movement. If any tonnage should fail to be ready for movement at the assigned time, it lost its priority and had to be rebid for at the next P. O. M. meeting.

Engineering Problems

With the exception of the lines in Tunisia, none of the railways in North Africa had been damaged by enemy action. In Tunisia, considerable demolition was carried out by the Axis forces, although even more was effected by Allied bombing and engineering demolitions in the retreat from the Kasserine area.

In one or two cases, enemy damage of railway bridges was carried out by airborne demolition gangs behind the Allied lines and in one case a bridge was destroyed by a minor earthquake between Algiers and Setif. In all, on the standard gage lines in Northern Tunisia, 5 bridges, totaling about 370 lineal feet, were destroyed

or damaged, which were either repaired in place or detoured temporarily by a track diversion and repaired later. On all of the rail lines in Tunisia there was some destruction of rail by shells and by demolition of rail centers and frog points but the damage was not large. On the narrow gage lines between Tebessa and Sousse-Gabes, 30 bridges, totaling about 4,600 lineal feet, were damaged or destroyed. In every case, unless the damage could be repaired at once, a diversion was constructed on the maximum permissible grade and the bridge was reconstructed at some later date.

All bridge work had to be carried out with caution, since the shoulders of fills, bridge approaches and bridge members were mined or booby-trapped. Bridge men equipped with mine detectors removed many such installations, suffering only a few casualties. One reconnaissance car, looking over damaged bridges, was blown up without casualty. Telegraph and telephone lines were generally destroyed and, after the campaign, railway signal sections restored or repaired about 1,000 miles of lines, including the installation of complete lines for railway use between Oran, Algiers and Constantine.

During the building up of the supply bases for the Tunisian, Sicilian and Italian campaigns, various track facilities were constructed, mostly by the British forces. Where there was room on existing tracks and adequate highway truck approaches, the formal layout of large dump areas served by parallel sidings was found unnecessary. Such rail facilities were provided only where heavy engineer stores were handled and were served by the minimum trackage needed. In all, 64 such facilities were constructed, with 66 miles of tracks. Many of these were soon abandoned due to the progress of the campaign, and unless they had some commercial value, have probably already been salvaged for use elsewhere.

Water treatment also came under the engineering section. As all water from wells in North Africa is highly impregnated with mineral salts, treating plants had been in use but had run short of soda ash for this treatment. Poor water had been the principal source of failure of French equipment. Eventually, this was brought under control by the securing soda ash for the French and the use of ball compounds on U. S. locomotives at each filling of the tank.

Equipment and Stores Difficulties

All French rolling stock was in poor condition at the time of invasion because of lack of repair parts and chemicals for water treatment. Firebox and boiler tubes of copper were leaking like sieves and could not be kept tight. Cars had lacked sufficient grease for so long that hotboxes were frequent and serious. The U. S. forces assisted in repairing this rolling stock, but much of the repair material and parts had to be manufactured or ordered in metric sizes adding to delivery delay.

The standard gage U. S. 2-8-0 locomotives, which came in through Oran as deck loads separate from tenders, were connected up by the 753rd "C" Company and worked under steam to their point of assignment. Cars came to Oran knocked down and were assembled by this same "C" Company of the 753rd Railway Shop Battalion at that point. Narrow (dual) gage 2-8-2 locomotives were received at Oran knocked down and shipped to the 753rd Railway Shop Battalion at Sidi Mabrouk for assembly. A total of 105 locomotives (2-8-2) were set up for use on the standard gage lines and 32 of the 62 narrow gage locomotives received were put in service. A total of 1,114 U. S. freight cars were assembled and placed in service, of which 60 were nar-

row gage, while 750 standard and 170 narrow gage cars received were stored knocked down for use in later theatres of war. In addition, the shop and car forces constructed 20 postoffice cars, 22 refrigerator cars, and 11 hospital trains. All equipment performed quite creditably in service on all lines, and because of increased capacity, materially increased the tonnage capacity of the line.

The French Railways in North Africa were short of boiler repair material, flues, iron and copper staybolts, plates and carbide for welding. All such material had previously been imported from France or Belgium, but such importation had long since been cut off. This material was ordered as quickly as metric sizes and shapes could be translated and drawings made. If the material could be supplied from U. S. locomotive repair materials in the emergency, this was done if it did not jeopardize the repair of the military equipment. Other items were ordered from the United States, but all of this took much valuable time.

Great difficulty was occasioned by the promiscuous delivery of railroad material on any ship in any convoy to any port, with the expectation that a railway representative would be present as the item was unloaded. Constant observation was made of the manifests by trained railroad stores personnel and even they missed some material, or it could not be found when advice of its arrival or expected delivery was transmitted to the local forces. Much railway material had been delivered before headquarters stores personnel arrived to start checking the theatre. Much material scheduled for delivery on certain dates in certain convoys failed to show up and a great amount of substitution and manufacture was necessary to keep even the U. S. standard locomotives in operation.

The final outcome of these stores difficulties and the collection of railway material was the setting up of two provisional railway stores companies, one at Oran and the other at Oued Smar near Algiers. The 753rd Shop Battalion maintained a stores depot for locomotive parts at Sidi Mabrouk Shops, near Constantine.

Review of North African Operations

What were the most serious faults in the North African railway operation? I would list them in the following order:

1. Lack of knowledge of the French language. In this connection note the comment of the British Railway Forces:

"The language difficulty was felt immediately and no interpreters were available for a considerable time. It is thought that greater attention should be paid in the planning stage to learning the language of the countries in which the operations are to take place. This could easily be arranged under a competent teacher specializing in the relevant subjects."

2. Lack of motor vehicles for transportation of supervisory officers and for reconnaissance.

3. Lack or slow delivery of equipment and repair parts from the States.

4. Lack of sufficient dirt-moving equipment.

The Sicilian and Italian Theatre

Starting with the landing of the 727th Railway Operating Battalion at Licata in Sicily on July 12, 1943, three days behind the invasion forces, railway operation was promptly restored, despite blown up bridges and tunnels, and the front lines were supplied with munitions and rations until the Axis army was chased across the straits at Messina. When Palermo was opened by the American forces on July 28, the Military Railway Service was ready to furnish rail service east to the army then fighting at Cefalu and Castelbuene along the rocky coast of Sicily. The Italian railway forces, when put back to work, proved most cooperative. It was in this theatre

that the 727th Railway Operating Battalion was cited by the Commanding General of the Seventh Army for its outstanding work.

In Italy, the 703rd Railway Grand Division put an advance party ashore with the early invasion troops at Salerno. When the 727th Railway Operating Battalion came in from Sicily, the 703rd moved in reinforced strength to Naples where it was soon joined by the 713th Railway Operating Battalion. There the first task was to dig out and repair one track to serve the water front where the engineers and the navy had cleared enough space of sunken ships to reach the dock wall. On this track a few cars and a nondescript steam locomotive had supplies moving to the 5th Army around Caserta five days after they had landed. Then they turned to the shambles that had been made by Allied bombing and German demolition of the water front, the railway yards at the Central Station and every bridge, subway, water tank, locomotive, frog or switch on the double track main line toward Sparanise and Vairane and on the single track line to Benevento on the way to serve the airfield at Foggia.

The Germans invented a new instrument of destruction in Italy, a track destroyer of which pictures have already appeared in this country. This was a large structural steel hook, or bull-tongued plow, pivoted on a flat car so that its point could be dropped below the ties in the middle of the track. Pulled by three locomotives, there was sufficient power to plow the middle of the track, breaking all of the ties. At the same time, small demolition charges were dropped on each side, to be clipped to and blow out a section of the center of each rail. Luckily, they used this machine on the double track main line from Naples to Rome and did not have time to complete the destruction of both tracks. On this line there was also very thorough destruction of bridges, requiring "shoo fly" diversions, with the movement by tractor scrapers and bull-dozer of large quantities of grading materials.

Work was expedited by moving up all of the maintenance of way companies from the Operating Battalions in North Africa, by the use of several Army engineer units and by the organization of Italian railway construction battalions and civilian contract gangs. With these forces, the lines were open from Naples on January 1, 1944, north to Vairane, to Foggia on the east and to Bari and Tarante southeast. The line up the east coast along the Adriatic, behind the 8th Army, was opened from Tarante to Vaste under the direction of the British Railway forces. Many of these lines had been operated by electric locomotives, supplied in part by hydro-electric power from plants now behind the German lines. These roads had to be operated by steam locomotives wherever they could be found and had escaped total destruction by the Germans. Luckily, it was possible to ship in some locomotives by ferrying them across from Sicily and routing them through Metaponta and Potenza to Naples.

Operation of the electrified lines by steam locomotives was a hazardous undertaking since the tunnels were many and unventilated. Several trainmen were asphyxiated, capped by the train caught in a tunnel near Potenza in March of this year where 500 non-paying passengers were asphyxiated. This was no fault of the Military Railway Service, as guards were never numerous enough to prevent unlawful riding of car rods and roofs. In fact, this train was operated by an Italian train crew and no Americans were present. Since coal is a scarce article in Italy, all U. S. locomotives will be equipped with oil burners in the near future to use oil from the Near East.



N. Y. Central Employee Public Relations Leaders at Cincinnati, Ohio

Around the table, seated (left to right): R. C. Heckel, asst. engr.; W. M. De Wan, yd. cond.; Walter Raabe, federal mach. inspr.; J. P. Murray, loco. engr.; F. A. Poehlman, city frt. agt.; T. J. Byrne, asst. ch. clk., dist. eng. office; H. W. Fleu, transit clk., D. F. A. office; W. D. Hammond, maintr. sign dept.; N. L. Fridman, psgr. repr.; L. W. Tepe, psgr. repr.; A. L. Bloebaum, car inspr.; H. E. Winn, draftsm., sign dept.; and (standing, left to right): Ira L. Austin, asst. sec'y, Bd. of Pensions; W. S. Dixon, Co-ordin. in ch. of War Prod. Training; J. J. Brinkworth, vice-pres. and gen'l mgr.; and C. A. Radford, publ. mgr.

Training Employees in Public Relations

By L. W. Horning*

FOR the past year the New York Central has been conducting a course† of training in public relations for its employees in New York State, with the assistance of the Industrial Service Bureau, New York State Department of Education. Over 1,000 employees in New York State have participated in the training and many others have now enrolled. The company considers such training as an important part of its program of post-war planning, in the belief, as a result of increased business, railroad employees are now meeting more people than ever before and, consequently, have an opportunity to develop many new friends for the railroads. Thousands of people who are using the railroads at present traveled by other means prior to the war. If friendly relations are established now with these people, the company believes that many of them may be retained as passengers and shippers after the war, when other forms of transportation will be more actively in competition with the railroads.

Representatives of the personnel departments of the New York Central and the New York, New Haven & Hartford recently made an arrangement through the United States Office of Education so that this training program will be available to railroad employees in the other twelve states through which these railroads operate. Under the arrangement, Arthur L. Mann, Chief, Bureau of Industrial Service, New York State Department of Education, who with the assistance of fifteen key employees of the New York Central at New York, developed the program, has familiarized representatives of the departments of education of the other twelve states with the material used in the course. These state

representatives will train key employees at various points on the railroads as conference leaders and these conference leaders will conduct the public relations training among groups of the employees.

The primary purpose of the course is to bring about a better understanding on the part of the railroad employees as to how the public, both passengers and shippers, should be served in order that their good-will may be retained and strengthened. The course also serves to impart to employees the value of the public's good-will in sustaining security of employment and fair wage standards to railroad employees. The training consumes a total of twelve hours, conducted in two-hour sessions—one night per week for a period of six weeks.

The subjects covered in the course included the following:

I—*Good-Will*: Individual and group approval; monetary value of good-will; who or what is the New York Central Railroad Company; the fundamental purpose of all business activity; what wants can the New York Central satisfy; who and what are the competitors of the New York Central; what are the natural advantages of the New York Central; the importance of the personal element; war and post-war conditions.

II—*Advantages of Being a Railroad Employee*: Discouragements and difficulties of the new employee; the resulting casualties; prevention and cure; morale; building a future for employees and the company.

III—*Employee-Employer Relations*: Definitions; employee wants; employer wants; management wants; ownership wants; conflicts, mutual interests; cooperation and understanding; importance of the customer and his wants; looking ahead.

IV—*Employee on the Job*: Jobs on which the employee contacts the customer; service jobs without personal contact; personal appearance; personal characteristics and mannerisms; complaints; opportunities; rules and regulations; judgment and tact; improving the service.

* Vice-president, personnel, New York Central System.

† See *Railway Age*, June 24, page 1204, for a comprehensive description of the content of the course and methods of instruction. See also issues of October 30, 1943, page 686, and January 8, 1944, page 170.

XI—Review and Summary of the Foregoing.

Earnest J. Simon	216 East Monroe Street, Springfield, Ill.
H. G. McComb	701 Illinois Building, Indianapolis 4, Ind.
Dr. Ralph H. Woods	State Department of Education, Frankfort, Ky.
Dr. R. O. Small	200 Newbury Street, Boston 16, Mass.
George H. Fern	State Board of Control for Vocational Education,

George E. Kohrman Lansing 4, Mich.
Arthur L. Mann State Department of Education, Jefferson City, Mo.
John J. McCarthy State Educational Department, Albany 1, N. Y.
Joseph Strobel Trenton Trust Building, Trenton, N. J.
Dr. Paul L. Cressman 150 East Broad Street, Columbus 15, Ohio.
 State Department of Public Instruction, Harris-
 burg, Pa.

William B. Connoley 1721 Quarrier Street, Charleston 1, W. Va.
A. S. Boynton State Department of Education, Hartford 13, Conn.
George H. Baldwin State Department of Education, Providence 3, R. I.

Any railroad interested in the program in states other than those listed above may make arrangements for the training by contacting L. S. Hawkins, Director, Vocational Training for War Production Workers, United States Office of Education, Washington, D. C.

Terminal Planned for Mexico City

LOOKING to fundamental improvements in the railway facilities serving the City of Mexico, D. F., plans are under consideration for the consolidation of the present passenger and freight facilities of the five lines now serving that city, which, at an estimated cost of \$16,000,000, will include a new Union passenger station, new freight and engine terminal facilities, new car and locomotive shops, a new 15-story general office building, and a considerable mileage of track elevation, with the abandonment of many of the present facilities of the participating lines. The railroads involved in the project include the National Railways of Mexico, the Inter-oceanic Railway, the Mexican Railway, the San Rafael & Atlxco Railway, and the Desague Railway.

Under the proposed plan, the present Buena Vista station immediately north of the civic center of the city, which now serves as a Union station for all of the roads, will be abandoned, and will be replaced by a new Union station located about a mile and one half to the east; a double-track main line serving this new station will be elevated to eliminate all street crossings at grade, and will be equipped with electric signals and electro-pneumatic interlocking; and all freight and industrial facilities will be consolidated along a loop line skirting the north and east portions of the city, entirely away from the business and residential areas.

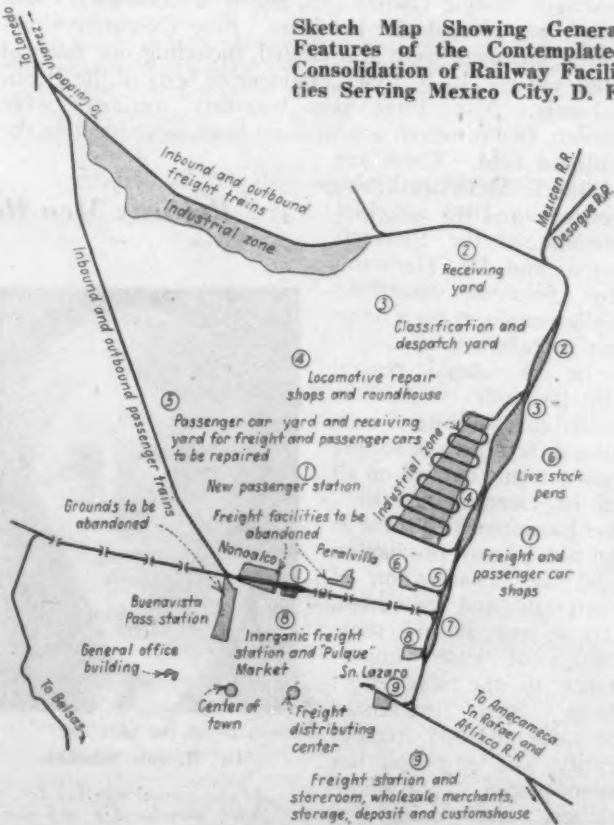
The new passenger station, which will be located on an extension of widened San Juan de Letran street in the area of the present Santiago yard, will be of the through type, in contrast with the present stub-end facilities at the Buena Vista station. Here, trains of the National Railways arriving from the north, west and south will pull in and leave at the west end, while trains of the Mexican Railways, the Interoceanic Railway, the Desague Railway and the San Rafael & Atlixco Railway, will pull in and leave at the east end.

The new general office building, which will consolidate offices which are at present located in 20 different buildings scattered throughout the city, will be located immediately west of the center of the business district, on Parque Via St., near the Paseo de la Reforma. This

The new consolidated freight and terminal facilities of the proposed plan, as well as facilities for the storage and repair of passenger cars, will be located east of the city proper, contiguous to an area which will be developed intensively as an industrial zone. These facilities, which will be reached by trackage entirely outside of developed areas, will include, from north to south, a freight train receiving yard; a large hump-type classification yard; a 52-stall enginehouse; a transverse-type locomotive repair shop; a passenger and freight car repair yard; and passenger and freight car repair shops. Located in the more southerly part of this same general area will be live stock facilities, a large general freight station and public market, and a second large freight development, which will include freight houses, warehouses for wholesale merchants, and custom's offices. The last-mentioned development alone, which is to be financed by private capital, is estimated to cost approximately \$3,000,000. Development of the consolidation plan as a whole calls for approximately 1,600,000 cu. yd. of grading and the construction of about 124 miles of tracks.

Of the estimated total cost of the proposed work, \$16,000,000, it is expected that approximately half will be offset by the sale of present property and facilities to be abandoned. Deducting also the \$3,000,000 private capital called for in the freight and warehouse development, and the \$1,200,000 for the proposed general office building, which will be paid for outright by the railways, leaves approximately \$3,800,000 to be financed. Of this, it is expected that approximately 50 per cent will be borne by the railways, and the remainder offset by the increased value of railway properties adjacent to the new passenger and freight facilities.

Sketch Map Showing General Features of the Contemplated Consolidation of Railway Facilities Serving Mexico City, D. F.



A. S. T. M. Holds Largest Meeting

Forty-seventh annual convention, held at New York on June 26 to 30, is characterized by intensive activity

TESTIFYING to the increasing importance of materials control, both under the wartime conditions now prevailing and in preparation for the peace to come, the forty-seventh annual meeting of the American Society for Testing Materials was held in New York on June 26-30, with an attendance that, in spite of present-day difficulties of travel, surpassed all previous records of the society. Specifically, a total of 2,063 members and guests registered at the meeting, which compares with the previous record of 1,523 at the 1937 meeting, and with a registration of 1,452 at the annual meeting in 1943.

Following the customary practice of the society, the business of the meeting was conducted largely through the agency of a series of 16 general technical sessions at which more than 100 committee reports and papers were presented. In addition, there were about 250 meetings of committees and subcommittees, this unusually large number of such meetings being occasioned by the fact that the publication of the society's book of standards, originally scheduled for late 1945, has been advanced a full year, thereby requiring the committees to get their specifications into final shape for the book at this time.

Executive Committee Report

In the election of officers, P. H. Bates, chief, Clay and Silicate Products Division, National Bureau of Standards, was chosen president, and Arthur W. Carpenter, manager, testing laboratories, the B. F. Goodrich Company, was elected vice-president. Five Executive Committee members were also elected, including one railroad man, namely, L. B. Jones, engineer of tests of the Pennsylvania. Also, three new honorary members were chosen, two of whom are, or have been, prominent in the railroad field. These are Milton E. McDonnell, who retired in 1943 as chief chemist of the Pennsylvania, and Dr. Hermann von Schrenk, consulting timber engineer for a number of railroads.

In its annual report, the Executive Committee stated that, in spite of wartime difficulties, the society has not only carried on all of its essential activities, but has intensified them as an aid to war production and the conservation of materials and resources. To be sure, it said, some things of lesser importance to the war effort have been minimized or discontinued temporarily, and emphasis has been placed "upon those things, the doing of

which will contribute in one way or another to the winning of the war." Pointing out that the emergency alternate provisions and emergency specifications that the society has been instrumental in promulgating have continued to demonstrate their wartime value, the Executive Committee considered it worthy of mention that, even after the intensive emergency work of 1942-43, activities incident to the development of emergency specifications have continued at a high level. Specifically, during the last year, 21 new emergency alternates were issued and 19 were revised, 9 new emergency specifications were issued and 4 were transferred to tentative status, resulting in a total of 123 emergency alternates and 35 emergency specifications now in effect. Believing that it is important to keep specifications in step with conditions, the Executive Committee reported that it had directed all standing committees to review the emergency alternate provisions and emergency standards within their jurisdiction and to report at the annual meeting their recommendations for continuance or cancellation of such emergency provisions and standards or, if desired, their transfer to tentative or standard status.

Discussing the new activities of the society, the Executive Committee referred to the rapid developments that have taken place in recent years in the field of powder metallurgy, and said that there was clearly a need for the development of standard methods of test and specifications for both the powders and the resulting compacts. Accordingly, the committee reported that it had authorized the appointment of Committee B-9 on Metal Powders and Metal Powder Products to carry out this work. Another field that is showing rapid development is that relating to plywood and plywood laminates. The Executive Committee reported that it had assigned the task

of keeping abreast of developments in this field to Committee D-7 on Timber, with the understanding that the personnel of the committee will be enlarged suitably to include representative producers and consumers of these newer types of materials.

One of the highlights of the meeting from the viewpoint of its interest to railroad men was a roundtable discussion on the organizing the classifying of industrial waters, which was sponsored by the Committee on Water for Industrial Uses. Through the work of this committee, procedures have been developed for sampling waters and for determining essentially all of their significant constituents, coupled with

Railway Men Honored by Society



Strauss Portrait, St. Louis, Mo.

Dr. H. von Schrenk

At the annual meeting Dr. von Schrenk was elected to honorary membership and Mr. Jones was elected a director



L. B. Jones

a carefully chosen method of recording results. One of the important remaining problems is to develop a method of interpreting the chemical analyses of waters in terms of the requirements of particular industries, and the purpose of the roundtable discussion was to present and describe a method that has been developed for accomplishing this. Many specialists in water treatment judge the suitability of the water for a given industrial process by comparing its analysis with that of other waters whose behavior in the particular process is known. As a first step toward setting up a simple and readily understandable procedure for applying this method generally, nine waters have been selected as a cross-section of the natural waters normally encountered in this country.

The roundtable discussion consisted of four papers which, for the most part, were devoted to describing the ways in which each of these nine samples could be expected to act in various industrial applications. In other words, the purpose was to show how a water identified solely by its chemical analysis may then be classified by comparing its mineral content with the analyses of the nine standard samples. Of the four addresses comprising the roundtable discussion, the one of most interest to railroad men was that presented by J. A. Holmes, National Aluminate Corporation, which dealt with the classification of feedwater for boilers operating at pressures between 100 and 400 lb. per sq. in. In this paper the nine typical analyses of surface and ground waters were discussed with respect to their effect on scale formation, carry over and corrosion, when used as boiler feedwater within the range of pressures mentioned; also, the paper summarized the effects of various methods of treatment on these waters.

Steel Committee Reports

One of the technical sessions of the meeting was devoted to steel and related subjects. Among other things, the Committee on Steel announced that, in order to utilize heats made in connection with war orders, which comply with all requirements of the specifications for quenched carbon-steel joint bars, except those governing the manganese content, it had been proposed to issue an emergency provision permitting an increase in the manganese content from a maximum of 0.80 per cent to 1.00 per cent. Following correspondence among the members of a committee handling this matter and contacts with the American Railway Engineering Association, with which association the manufacturers had already been in touch, it was decided to lay this matter aside pending an investigation of bars with a higher content of manganese. Whether, with higher permissible manganese, the optional bend test should be made mandatory, is one of the questions involved.

Reference was made in the report of the Committee on Steel to the increasing interest in magnetic particle testing. Two groups have been active on heavy forgings and castings. A proposed method of testing castings was approved at the New York meetings and will be referred to the society during the summer. The several steel casting specifications, including A87, railroad castings, will include a reference to the new test when they are issued. With so many different technics being used, "it is quite obvious," said the committee, "that some authoritative statements in this field would be constructive." The Committee on Steel also accepted two proposed new specifications covering carbon steel and alloy steel blooms, billets and slabs, for re-forging purposes. These are to be referred to the society during the summer, and if agreeable to the specifications committee of the Me-

chanical Division, A.A.R., the existing tentative specifications for billets (A248) would be withdrawn concurrently.

The report of the Committee on Steel contained numerous recommendations, embracing revisions in tentative standards, tentative revisions of standards, revisions of standards for immediate adoption, the adoption of tentative standards as standards, the withdrawal of standards, and the reaffirmation of standards. A partial list of the specifications effected by these recommendations follows:

Revisions of Tentative Standards

- Welded alloyed open-hearth iron pipe.
- Alloy-steel bolting materials for high-temperature service from 750 to 1,100 deg. F., metal temperatures.
- Heat-treated carbon-steel bolting material.
- Lap-welded and seamless steel pipe for high-temperature service.
- Seamless alloy-steel pipe for service at temperatures from 750 to 1,100 deg. F.
- Seamless carbon-molybdenum alloy-steel pipe for service at temperatures from 750 to 1,000 deg. F.

Tentative Revisions of Standards

- Alloy-steel forgings for general industrial use.
- Carbon-steel and alloy-steel ring and disk forgings.

Revisions of Standards, Immediate Adoption

- Carbon-steel bars for springs.
- Carbon-steel bars for springs, with special silicon requirements.
- Welded and seamless steel pipe.
- Black and hot-dipped zinc-coated (galvanized) welded and seamless steel pipe for ordinary uses.
- Low-carbon nickel-steel plates for boilers and other pressure vessels.
- Molybdenum-steel plates for boilers and other pressure vessels.
- Boiler and firebox steel for locomotives.
- Carbon-steel plates for stationary boilers and other pressure vessels.
- Carbon-silicon plates of ordinary tensile ranges for fusion-welded boilers and other pressure vessels.
- Chrome-manganese-silicon (CMS) alloy-steel plates for boilers and other pressure vessels.
- High tensile strength carbon-silicon steel plates for boilers and other pressure vessels (plates 4½ in. and under in thickness).
- Alloy-steel bolting material for high-temperature service.
- Multiple-wear wrought steel wheels.
- Heat-treated wrought steel wheels.

Adoption of Tentative Standard as Standard

- Manganese-vanadium steel plates for boilers and other pressure vessels.

Withdrawal of Standards

- Forge-welded steel pipe.
- Riveted steel and wrought-iron pipe.

Reaffirmation of Standards

- Steel for bridges and buildings.
- Structural nickel steel.
- Structural silicon steel.
- Structural rivet steel.
- One-wear and two-wear wrought steel wheels.
- Steel wires.

Iron-Chromium Alloys

Also presented during the session on steel and related subjects was the report of the Committee on Iron-Chromium-Nickel and Related Alloys, whose activities are concerned with those ferro-alloys that are known for their resistance to corrosion and high temperatures. This committee recommended revisions in the standard specifications for chromium and chromium-nickel plate and

sheet for unfired pressure vessels, and also in the specifications for chromium and nickel-chromium clad plate, developed in co-operation with the Boiler Code Committee of the A. S. T. M. In addition, the committee recommended revisions in the boiling nitric acid test for corrosion-resisting steels. Progress was reported on four specifications covering stainless tubing for various applications, and it was also reported that new specifications for stainless springs and for hot-rolled and cold-drawn bars are in preparation. Included in this same session was the report of the Committee on Wrought Iron, in which the committee recommended for publication as tentative a revision of the standard specifications for wrought iron plates. This committee, acting jointly with the Committee on Steel, also recommended that the standard specifications for rivet steel and wrought iron pipe be withdrawn.

Among the committee reports presented during a session on non-ferrous metals and allied subjects was that of the Committee on Copper and Copper Alloys, Cast and Wrought.

This committee made a number of recommendations of direct interest to the railroads. These included recommended revisions in the tentative standard specifications for bronze castings for turntables and movable bridges, and for bearing and expansion plates for fixed bridges. Also included were recommended revisions (submitted for immediate adoption) in the standard specifications for bronze castings in the rough for locomotive wearing parts, in the specifications for car and tender journal bearings, lined, and in the specifications for copper-alloy bearing and expansion plates for bridge and other structural uses.

Cement and Masonry Materials

A large amount of information of direct and indirect interest to the railroads was presented in the form of various committee reports and papers during a session on cementitious and masonry materials, and two sessions on concrete. In its report, the Committee on Cement presented tests for determining vinsol resin in cement, the air content of Portland-cement mortar, and the heat of hydration of Portland cement, all of which were offered for publication as tentative. To replace the present standard methods of sampling and testing Portland cement, this committee presented (for immediate adoption as standard) methods of sampling cement, tests for fineness on the No. 200 sieve, tests for determining time of set and specific gravity, a pat test for soundness of hydraulic cement, and tests for determining normal consistency and the tensile strength of Portland cement and Portland-cement mortars. In addition, the committee presented for immediate adoption recommended revisions in the standard specifications and methods of chemical analysis of Portland cement. It also recommended that the test for the compressive strength of Portland cement mortars, and portions of the tentative methods of chemical analysis of Portland cement, be adopted as standard.

In its report, the Committee on Clay Pipe proposed tentative specifications for extra-strength clay pipe, and a new tentative revision of the standard specifications for clay pipes was also recommended. The Committee on Manufactured Masonry Units recommended certain revisions in the tentative specifications for glazed building units, while at the same time it recommended for adoption as standard the tentative specifications for building brick and the test for initial rate of absorption and efflorescence of brick. This committee also presented for adoption the tentative revision of the standard speci-

fications for hollow load-bearing concrete masonry units. In its report, the Committee on Mortars for Unit Masonry recommended that the tentative specifications for aggregate for masonry mortar be adopted as standard, and that the tentative specifications for mortar for reinforced brick masonry be revised. Among the papers submitted during the session on cementitious and masonry materials was one dealing with the effects of certain variations in consistency and curing conditions on the compressive strengths of cement-lime mortars.

One of the items presented during the sessions on concrete was the report of the Committee on Concrete and Concrete Aggregates, which included a number of new tentative methods that embody revisions of, and are designed to replace, the standard methods of test. These include tests for making and curing concrete compression and flexure specimens in the laboratory and in the field, a test for the compressive strength of molded concrete cylinders, and a test for the flexural strength of concrete. In addition, revisions were recommended in the methods of securing, preparing and testing specimens from hardened concrete, and in the tests for yield, weight per cubic foot and air content of concrete.

Among the papers that were presented during the sessions on concrete were several that dealt with such subjects as the application of fly ash in lean concrete mixes, the effect of entrained air on the constituents of Portland cement concrete, the development of precision indices for use in making compression tests of concrete cylinders made from the same batch, and the measurement of concrete strength by embedded pull-out bars. In the paper on the use of fly ash, data were presented to show that no improvement in strength or workability is achieved by fly ash substitutions for cement in lean concrete mixes. Conversely, when fly ash is substituted for sand, higher early strength and improved workability result.

In the paper dealing with precision indices for compression tests of concrete cylinders, data from representative concrete laboratories were utilized to establish indices which sum up in a single figure the effectiveness of a laboratory's technic in moulding, capping, curing, and breaking cylinders. By comparing its results with those presented in the paper, any laboratory may judge the relative efficiency of its own technic. The paper on the measurement of concrete strength by embedded pull-out bars presented results of laboratory studies of a method of making strength tests of concrete in place by means of such bars. This method is said to give promise of furnishing a better measure of actual compressive strength than the use of test cylinders.

Bituminous Waterproofing and Roofing

During a session on petroleum products and related subjects, two committee reports were presented that contained material of interest to the railroads. One of these was that of the Committee on Bituminous Waterproofing and Roofing Materials. This committee recommended revisions in the tentative specifications for asphalt-saturated asbestos felts and asphalt-coated asbestos felts for use in waterproofing and in constructing built-up roofs, and in the tentative methods of testing felted and woven fabrics saturated with bituminous substances for use in waterproofing and roofing. Also, revisions for immediate adoption were recommended in the standard specifications for asphalt for use in constructing built-up roof coverings, for asphalt-saturated roofing felt and coal-tar saturated roofing felt for use in waterproofing and in constructing built-up roofs, and

for woven cotton fabrics saturated with bituminous substances for use in waterproofing.

At this same session, the Committee on Coal and Coke recommended for adoption as standard certain revisions in the standard method for designating the size of coal from its screen analysis. This committee also recommended for adoption as standard the tentative revision of the standard methods of laboratory sampling and analysis of coal and coke, and the adoption as standard, with revisions, of the tentative definitions of the terms "gross calorific value" and "net calorific value" of fuels.

During a session on timber and similar subjects, the Committee on Fire Tests on Materials and Construction presented for adoption as standard, with revisions, the tentative method of test for fire-retardent properties of wood, while an alternate test was presented for publication as tentative. During this same session, the report of the Committee on Timber presented as information, descriptions of proposed methods of testing plywood and wood-base laminates.

Power Trains

TEN 5,000-kw. and twenty-four 1,000-kw. power units are being built for "roving" power trains for service in Russia by the Westinghouse Electric & Manufacturing Company. The 5,000-kw. trains comprise eight cars and the 1,000-kw. trains three. The one cooling tower car in each of the three car trains is supplied by the American Car and Foundry Company and all of the other cars are being built by the General American Transportation Company.

The trains will be used in rebuilding devastated areas destroyed by war and for the operation of repair plants behind the lines.

Specifications for the 5,000-kw. trains required that the power plant operate with a minimum loss of water and made it necessary to use a closed steam cycle and air-cooled condensers. Space and weight limitations, and re-

liability were important factors in determining the steam conditions for the 5,000-kw., 3,000-r.p.m., prime mover to be 600 lb. per sq. in. gauge and 750 deg. F. at the throttle, and exhausting at 2 lb. per sq. in. gauge. Under these steam conditions the turbine generator requires 80,000 lb. of steam per hour to produce a gross generator output of 5,000 kw.

Space limitations, steam production requirements, and the low grade fuel for the furnaces fixed the type and number of boilers, super heaters, economizers and other steam generating auxiliaries.

Eight railway cars of the freight type each approximately 50 ft. long are required to house and support the main and auxiliary power plant equipment. The framework of each car is designed to meet the loadings of the equipment located in the particular car. All cars have double walls for all exposed surfaces with thermal insulation placed in the inter-wall space.

The designation and arrangement of the cars in the power train are:

Cars No. 1 and No. 2 for main steam condenser.

Car No. 3 for the main turbine-generator unit and switchboard.

Car No. 4 for the air compressors and the boiler feed water pump.

Car No. 5 for the boiler feed water.

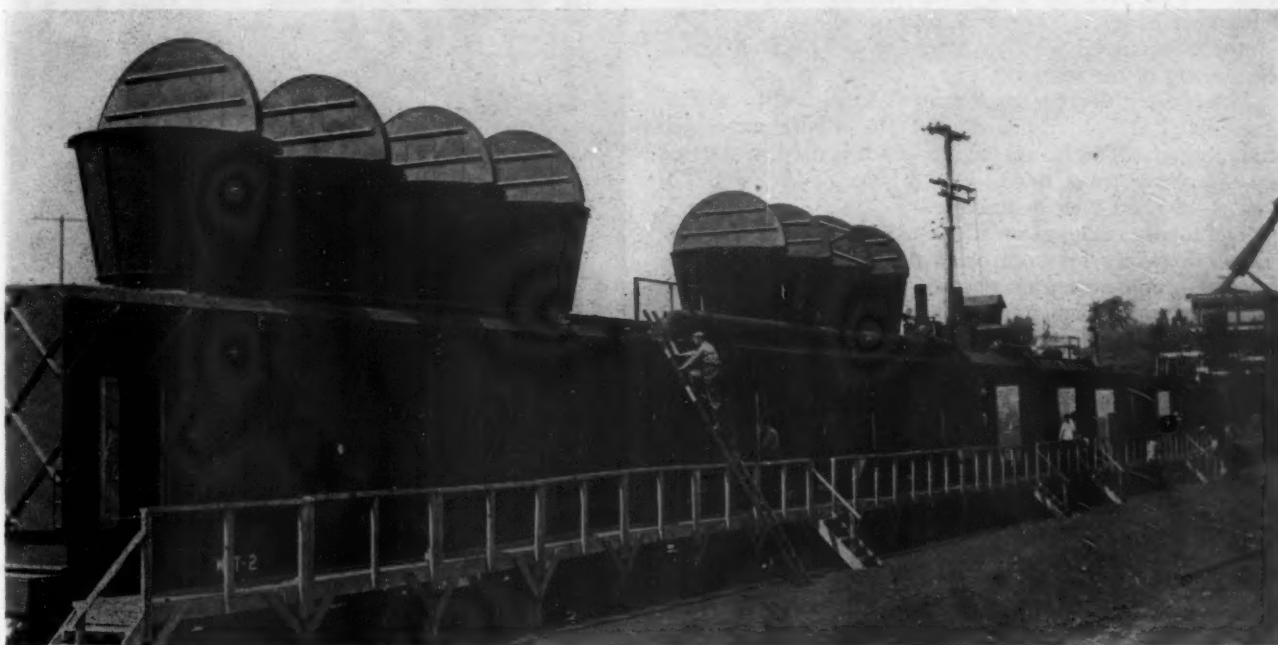
Cars No. 6 and No. 7 for the main steam generating equipment.

Car No. 8 for work shop and living quarters for the operating crew.

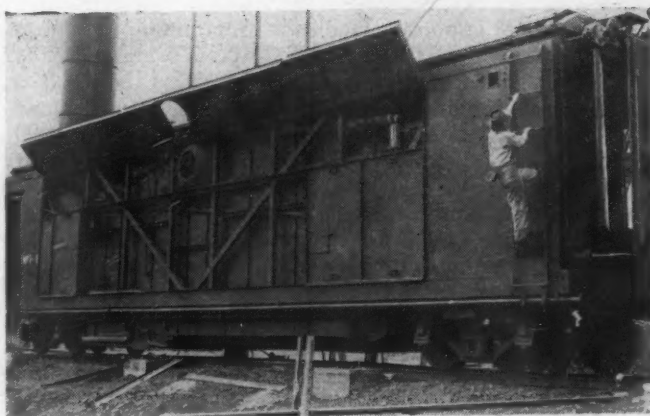
Each power train is supplied with the essential coal and ash handling equipment required to operate the power plant.

The condenser is designed to condense the exhaust when cooled by air at temperatures from minus 40 deg. F. to 95 deg. F. The prime function of the condenser is the recovery of condensate.

In this air-cooled condenser it is imperative that steam be supplied to all the cooling surface; otherwise under extremely low ambient conditions ice will form on the idle areas leading to blocked and eventually ruptured tubes. The flow of air through the condenser sections is controllable by the use of three-piece covers for the air intakes to the condensers. Sections of the cover can be



One of the 5,000-Kw. Trains Showing the Cooling Tower Cars in the Foreground



One of the Two Steam Generating Cars for the 5,000-Kw. Train

added or removed, depending on the outside ambient temperature conditions.

Eight condensing sections are installed on each of two cars. Four blowers on each car draw the air from the outside through the condenser to a plenum chamber at the center and then discharge it upward. Each air discharge stack is provided with a hinged cover which is normally opened when its respective blower is in operation and can be closed when its blower is not in operation. This is to prevent recirculation when blowers are removed from service because of low ambient temperature conditions.

Each condenser car is equipped with a single-stage ejector and an air-cooled after condenser. The chief function of the ejector is to keep air from collecting in the condenser sections, resulting in cold spots and possible ice formation.

The condensate dropping from the tubes is reheated and deaerated by the incoming steam before it is picked up by the condensate pumps and returned to the boiler.

The turbine generator car contains the main turbine generator unit, an auxiliary Diesel-generator unit, a service transformer, and switchgear equipment. The generator delivers power at 6,300-/10,900 volts, 50 cycles, 0.8 power factor, 3,000-r.p.m., and 6,250 kva. The generator is equipped with air filters to aid in maintaining cleanliness of the machine.

Power for the train auxiliaries is furnished by a 750-kva. 380/220 volt, 3-phase, 50-cycle, 4-wire air-cooled transformer. The Diesel engine which is used in starting up the power train, drives a 93.8-kva., 75-kw., 380/220 volt, 4-wire, 50-cycle generator.

The totally enclosed metal-clad switchgear contains oil circuit breakers for control of the main generator, the four high voltage feeder circuits, and high voltage fuses for the train service transformer. The circuit breakers are electrically operated, mechanically trip free, and are rated 600 amp., 15,000 volts with 150,000 kva. interrupting capacity.

Car No. 4 contains two 3,600-r.p.m. boiler feed water pumps driven by steam turbines; one evaporator unit to supply 2,400 lb. of makeup water per hour at 32 deg. F.; a deaerator to remove the air from the makeup; a small

motor-driven water pump for delivering treated water to the evaporator; one set of water treating equipment; three 400 cu. ft. per min. air compressors, one of which is motor driven and two turbine-driven; an air storage tank and a water cooling tower and pump.

The boiler feed water car, which is thermally insulated, and provided with heating coils, has a feed water storage capacity of 10,000 gal. Each feed water car has two motor-driven 225-gal. per min. booster pumps which deliver feed water to the supply line of the boiler feed water pumps.

The two boiler car units are essentially duplicates and are arranged so that the stoker ends are adjacent to each other. Each boiler car contains a 40,000-lb. per hr., two drum, bent-tube, water-wall boiler designed for 660 lb. per sq. in. gauge, 750 deg. F. total temperature with the feed water entering the economizer at 200 deg. F. The boilers were designed and built by, and all steam generating assembled on the boiler cars by the Combustion Engineering Company. There is also a super heater and economizer, soot blowers and a locomotive type stoker (the latter two devices are air-operated to minimize the amount of makeup water); two 9,900-cu. ft. per min. motor-driven forced draft fans and one two-speed 46,000 cu. ft. per min. induced draft fan to supply air for combustion. Also included are necessary measuring instruments and control equipment.

The service car provides living quarters for the operating crew of the power train, and space for light repair work.

The 1,000-kw. power train units consist of one boiler car, one turbine-generator car, one cooling tower car, and coal handling equipment.

* * *



Boutonnieres for the Locomotive

Engineer A. E. Dennison and Fireman A. A. Antetomaso adjust bouquets on the front of the engine, prior to beginning the local run from Reading Highlands (Mass.) into Boston. B. & M. commuters, entering into the spirit of flower-minded Boston & Maine engine crews, have, according to rumor, supplied some rare blooms for engine décor.

Condenser Characteristics

Total fin surface, sq. ft.....	90,000
Total tube surface, sq. ft.....	10,500
Cooling air through condenser, c.f.m.....	800,000
Steam condenser, lb. per hr.....	80,000
Tube material	Galvanized steel
Temperature rise of air through condenser at full load, deg. F.	90

Railroad Structural Materials*

Metallurgical aspects of the present status and future improvements in locomotives and cars

By S. L. Hoyt and H. W. Gillett,

Battelle Memorial Institute

EVER since the first locomotives were put on rails, the railroads have presented both a market and a problem to metallurgy. The two industries have come along together with each stimulating the other and, in turn, profiting from close technical collaboration. They are closer today than ever before, and present indications show the need for continued and harmonious cooperation between these two fundamental industries.

The locomotive must have weight and from that point of view there has been little incentive to save over-all weight. There is of course a limit, particularly in view of the rail road imposed by the drivers, and the matter of locomotive weight may deserve more attention. So far, however, relatively low-strength materials have been used for many parts and their greater cross-sectional area, which gives greater stiffness, may be a definite advantage. In these cases, the selection of the material has been relatively simple, with the major problem of procurement that of maintaining the quality of the parts for security against failure, too rapid wear, and the like.

Locomotives

In recent years there has been some interest in the use of alloy steel for boiler plate, presumably to secure higher pressures without adding to the plate thickness, or otherwise to take advantage of reduced weight in the shell. This would appear to be a perfectly logical step to take along with the use of welding for boiler fabrication. It is the obvious answer to the problems of embrittlement around rivet holes and of leaks at high pressures. The economy of using high steam pressures is well known, and any serious attempt to take advantage of them in locomotive construction should include consideration of high-strength steel as well as welding.

Turning to the reciprocating parts of the locomotive, in contrast to the need for considerable over-all weight, there is a strong incentive to reduce the weight to the minimum, since even the best practice imposes severe stress on both the track and the locomotive. This situation has given the locomotive manufacturers a dilemma, since the obvious metallurgical solution is the use of heat-treated alloy-steel parts, with which, however, the railroads have had a rather unhappy breakage experience. Some attempts have been made to use alloy steel, heat treated with normalizing and drawing instead of a liquid quench and drawing, presumably with the same design. The slower air cooling does not take full advantage of the alloy content, and the parts thus treated were under the economic disadvantage of giving a relatively small increase in strength for the cost of the alloy, as compared to the greater improvement that can be secured

with a full liquid quench. More recently, a new design for side and main rods has been tried which includes the substitution of frictionless bearings for the conventional bearing. The weight of the reciprocating parts was materially reduced to help attain the new high speed of passenger trains. This whole problem seems to be so important under present operating conditions that a major effort to solve it in the most economical way appears justified.

Before leaving the locomotive, one metallurgical development of the war can be cited that may have really revolutionary effects on the railroad industry—that of the development of alloys for high temperature service that bid fair to make the gas turbine feasible. When this is accomplished we may expect that locomotives using that type of propulsion will come in for comparison with existing types. At oil refineries, with cheap or waste fuel available, the gas turbine is economical when the operating temperature is in the neighborhood of 1,000 deg. F. This temperature is not too high for the older alloys, but the efficiency is too low when more expensive fuels must be used. The new materials indicate possibilities of carrying the temperature to high levels at which an important improvement may be expected.

Recent tests of creep strength indicate values of well over 12,000 lb. per sq. in. for a creep rate of 1 per cent per 100,000 hours at 1,350 deg. F. This represents a marked advance in high temperature alloys. As soon as design and construction, and experience in operation, have made it possible to utilize the new materials at full efficiency, the gas turbine drive may take on practical significance for railroad service.

Freight and Passenger Cars

The problem of materials for freight-car bodies has been examined in great detail over the past 10 years. While we have by no means seen the end, the popular material to date seems to be open hearth steel with a small addition of copper for protection against atmospheric corrosion, though the mild-alloy, high-strength steels have come in for considerable study and are favored for certain conditions.

In the meantime, the great war-time production of aluminum has greatly reduced the cost of the material while—what is of great significance to fabrication—equipment, processes, and skilled personnel are now abundantly available for the application of the aluminum alloys to fields involving shapes and flat stock. These alloys have likewise been tried for certain types of equipment and are under investigation.

Passenger cars present a somewhat different problem, and this service introduced truly radical innovations in material and design. This was necessary to secure improved performance and passenger appeal. The success

* From a paper presented at the semi-annual meeting of the American Society of Mechanical Engineers held at Pittsburgh before a session sponsored jointly by the Railroad and Metals Engineering Divisions on June 20, 1944.

of the designers in accomplishing their purposes and of the railroads in attracting patronage is an outstanding achievement of recent railway history. The record to date permits several tentative conclusions on materials for passenger cars. The first is the utility of materials which have higher strength-to-weight ratios than that of mild steel, without regard, one is tempted to say, for the cost. Three materials have been used to date: the mild-alloy high-strength steel; cold-rolled stainless steel; and high-strength aluminum alloys. It is noteworthy that welding was also adopted for fabrication, and in apportioning credit for lightweight and safety of the new passenger cars, it is well to remember that design, materials, and fabrication have all joined in achieving this result. As time goes on it will be in order for the railroads to reappraise this field of materials, with favorable strength-to-weight ratios, to select the one which has the best all-around characteristics.

Before leaving passenger-car bodies, the protection of both outer and inner surfaces of steel, aluminum, or magnesium with resistant and decorative coatings has interesting possibilities. After the war we should have available huge quantities of synthetic rubbers, while natural rubber will doubtless be looking for new uses. These rubbers are known to be outstanding in corrosion and abrasion resistance, and it is suggested that their use as a permanent finish for railway service should be given serious consideration.

Wheels and Axles

Freight and passenger car wheels have received a great deal of attention by suppliers and users, and there does not seem to be much to be added here. If further improvements are needed in the interest of securing lighter weight, greater strength, or added safety, we may therefore expect to see a modified or even a new material developed.

The railway car axle occupies an important position in the history of engineering materials. Woehler made his first study of the fatigue of materials on axles and established 23,000 lb. per sq. in. as the maximum operating stress which would not cause failure by fatigue. This figure has been the basis of design of car axles with the use of a factor of safety, but as Horger and coworkers have shown, the stress concentration at the press fit brings the stress, calculated without reference to local stress concentration, down to around 10,000 lb. per sq. in. or less, a distressingly low figure. The axle remains an Achilles' heel and continues to demand attention.

The axle, like so many railway parts, is dominated at all stages from purchase to scrap by cost. Estimates of the cost of heat-treating carbon and alloy steel axles have come out too high for serious consideration, and the same holds for the cost of boring out the center to reduce the weight. The hot piercing of billets, as for gun tubes, is reported to be cheap and this, one of several cases where war-induced improvements in technique bid fair to apply to peace-time problems, may give the answer for the lightweight hollow axle which is now in the limelight.

A metallurgical objection has been raised to heat treatment for axles in that overheating the journal will destroy the properties produced by the heat treatment. This indicates that if heat treating is to be considered, a steel should be selected whose tempering temperatures, for the strength requirement, would be above the usual run of hot-box temperatures. Alternatively, hot boxes might be prevented! It is also understood that frictionless bearings avoid the common hot-box difficulty so there

should be no complication with that type of bearing, from a heat-treated axle, but this is not yet the answer for the freight car.

Truck and Coupler Castings

Couplers for freight cars are made of Grade B cast steel of about 70,000 lb. per sq. in. tensile strength. Attempts to reduce the weight by using 90,000 lb. per sq. in. high-strength steel castings have been unsuccessful because the saving could not justify the added cost. This does not necessarily hold for lightweight passenger cars where weight-saving is more valuable. From the standpoint of design, the size of the part could be reduced at least 20 per cent and apparently this would be well worthwhile if the cost could be kept in line. With the foundry technique of using large alloy additions and a heat treatment which consists of normalizing plus drawing, it is highly doubtful if the requirement of 90,000 lb. per sq. in. tensile strength could be secured at a low enough cost. With this practice a premium is paid for alloy which is not used to its full efficiency in increasing strength.

Here the experience of the war may again be called on to good advantage. It has been found that steels of lower alloy content can give the required strength if a liquid quench is substituted for the slower air cooling of normalizing. Very satisfactory results are being obtained both in properties and in alloy conservation. Even the fear of the foundrymen of ruining castings which have both heavy and light sections is now known to be largely unfounded. At present, many foundries are equipped with means for liquid quenching and have become skillful in the art of handling more complicated castings. Now that this equipment and experience are available, a reappraisal of the cast-steel coupler seems to be in order. With quantitative knowledge of the effects of various alloy elements on hardenability, or efficiency of heat treatment, it should be possible to redesign the coupler to secure the optimum combination of weight and cost. It is not unreasonable to expect that the efficacy and relatively low cost of a good liquid quench, as compared to high alloy additions, would be capable of saving both weight and cost.

Possibly this same treatment might also apply to parts of the draft gear, but there has been considerable emphasis put on those parts and space limitations have already dictated the use of high-strength steel. There again, however, it may be possible to reduce the initial purchase price by using the liquid quench.

Design and Metallurgy

Side frames and bolsters are also made of Grade B cast steel. Here again a tremendous amount of study has gone into the manufacture of these parts to combine design and metallurgy for the best over-all results. In earlier times, wood, malleable cast iron, and wrought iron were used, while of more recent date, rolled steel has been tried. Common carbon steel has survived and, by redesigning and testing, the weight has steadily decreased and both maintenance cost and life have improved. The engineering is conservative, since the maximum combined design stress is only 16,000 lb. per sq. in. or less than one-half the specified yield product. Testing experience with high-tensile steel of 90,000 lb. per sq. in. tensile strength indicated that the saving in weight was not justified by the additional cost. It is to be noted that the liquid quench was not permitted. Considerations of weight are of so much more importance in high-speed

passenger cars that the issue was more or less forced in spite of an increase in price.

The steel rail is an old problem. Each length of main line rail costs about \$40 and it takes many of them to make a railroad. That kind of a problem is bound to remain with the railroads as long as they continue to operate. With the history of the rail we shall not attempt to deal, but we would point out that the steel rail precisely fits the picture, previously mentioned, of a low-priced, tonnage product whose quality must be kept at a high level. In other words, this problem is essentially one of continued and intelligent cooperation with the manufacturers to take advantage of all technological improvements of the steel industry. We know no new formula which might be used for the betterment of the material of the rail, within the permissible cost limit. A whole bouquet of orchids is due the railroads, the rail makers, the engineers, and the metallurgists for the development of slow cooling on the one hand, and the detector car on the other, for removal to so great a degree of the past menace of transverse fissure failures. Other causes for rail failures still exist, for which other remedies must be found.

"Road of Velvet" Rail

While on the subject of the steel rail we must mention the experimental "road of velvet" or continuous rail. To the passengers such a road must be highly satisfying since it affects the outstanding evil of fast service—jolts or rough riding. Furthermore, the low maintenance costs which have been reported must be gratifying to the railroad management. If that effect can be obtained at a reasonable cost, the goal is surely worth striving for. Here is an opportunity for the welding, metallurgical, and engineering fraternities to continue to work together for big stakes, in achieving high speeds safely. It might also help if the rails were purchased initially in longer lengths to reduce the number of joints to make and maintain, a scheme already being explored.

Looking at the railroad situation as a whole, it seems clear that we have entered a new era, that of high-speed traffic. Many passenger trains and some freight trains already operate on stepped-up schedules and plans are under way for a rather general increase in the speed of freight trains. High speeds affect all parts of the railroad structure which produce tractive force or which carry the loads or service stresses. A corollary of high speed is low weight so that insofar as this affects materials, the design practice of increasing the section to increase its strength is no longer suitable. Recourse must be had to new materials which are either inherently stronger or which have a more favorable strength-to-weight ratio than the old.

Metals for the High-Speed Era

In so far as high speeds affect fabrication or construction, the outstanding feature of recent years has been the swing to welding to save weight and increase the joint efficiency. Both of these practices are in flux and it is the hope of all that the new materials and the new methods of shaping, joining, and fabrication will provide needed answers to many railroad problems. Surely there is a treasure house of ideas awaiting appraisal, and there has already been considerable speculation of a general nature, but we should not look for any real progress until each application is shown to be correct and economical.

Nowhere is the impact of the new engineering require-

ments felt so keenly as in the selection and processing of materials for stress-carrying members. While retaining all the elements of safety and comfort, the weight of the trains must be slashed and, if at all possible, with improved economy of operation. It is the present purpose to discuss some of these material problems from the standpoint of metallurgy.

Open hearth steel is a tremendously useful material. It does a good job in many applications and takes punishment rather easily. When in need, it can be repaired by the simplest methods. Grade B castings and the carbon-steel forgings are in the same category as the open-hearth plates and shapes. But with the mild steels you can't build a standard passenger car weighing only 110,000 lb., especially if you stick to riveted construction.

When high-strength steels or aluminum alloys are to be substituted, one is confronted with new and different metal problems. Taking, as an example, the question of the material to use in place of open-hearth steel for passenger cars, there have already come into prominence the strong, light alloys of aluminum, stainless steel, and the mild-alloy high-strength steels. Each is as different as can be from the others, and the practice used to handle open-hearth steel either does not apply or has to be modified in certain important particulars. Experience being gathered with the equipment which is now in operation should show in time which of these three types of materials is best and cheapest.

The war has had the most pronounced effect on aluminum, (1) by greatly increasing the production of the prime metal with a consequent reduction of its cost, and (2) by providing workers and equipment for the production and rolling of the various alloys and for fabrication. This involves particularly flat stock and shapes, both of which would be used in railway car construction. Furthermore, aircraft designers use the aluminum alloy interchangeably with steel for important stress-carrying members, whichever adds the least weight to the plane. Designers who have specialized in steel will do well to bear in mind that aircraft designers ask no favors for the aluminum alloys though they are dealing with most critical needs for safety, weight, and strength, and operate with relatively low factors for safety.

Liquid Quench and Draw

Turning to the question of substitutes for the popular medium-carbon steel, wrought and cast, the metallurgical treatment of many stress-carrying members depends on the acceptance or rejection of the liquid quench and draw. Here it is well to bear in mind that there are cases of standard alloy steels being used on railroads in the fully heat-treated condition for lightweight construction, and, hence, with the proved utility of this practice in mind, it would be well to determine the cause of past unfavorable experiences with the liquid quench to see if the deficiencies can be overcome.

Heat treatment is ordinarily the cheapest practice metallurgy has to offer for increasing the strength of steel without too great a sacrifice of ductility. If a liquid quench is not to be used, then larger additions of alloy must be made to secure, with slower air-cooling, the same strength that can be secured with straight carbon or lower alloy steel with a faster liquid quench; the alternative is acceptance of less strength if smaller amounts of alloy are used. The new NE steels, of which so much is expected, were designed for an effective liquid quench, that and the scrap situation being the explanation of their ability to conserve alloy. The amount of alloy which is used is just sufficient to give a complete

quench for the section and cooling rate involved, and it is only by securing the most out of the quench that the small amount of alloy is able to give the properties. Those shops which have adequate heat-treating facilities can make good use of the new lower-alloy steels, but those which do not will undoubtedly have to use more highly alloyed steels.

Another consideration, which seems to be particularly pertinent to the railroads, is that of the drawing temperature. Some steels, though no harder in the as-quenched condition, permit a higher drawing temperature than others for a required set of properties. Since stresses are to be avoided or eliminated in so many parts, the composition should be so selected for such applications that a high draw can be used. The use of a small amount of molybdenum and a special deoxidation practice are both beneficial in this respect. Furthermore, good properties can be secured with certain steels which are drawn at about 1,000 deg. F., which is a stress-relieving treatment used for important ordnance weldments.

Developments in Steel-Making

Another factor is that of steel-making practice. This has been highly developed in recent years, particularly for the heat-treating steels. By means of good furnace practice and judicious use of aluminum in deoxidation, particularly good toughness at high strength levels and favorable response to heat treatment can be obtained. This has been found to be particularly valuable where welding is used. Another development in steel making is the use of "intensifiers" which confer on relatively cheap alloy steels a remarkable response in heat treatment. This is sufficiently promising to be possible of great interest in railroading. In heat treatment, these steels respond like fully alloyed steels with deep-hardening in relatively heavy sections, yet in the soft condition, they machine very much the same as carbon steels.

We may summarize this situation about as follows: If, after suitable study, it is decided that the liquid quench is not suited to the production of important forgings and castings, improved strength can then be had only at extra cost for the relatively large amounts of alloy which are needed. That will not be so important for passenger cars and some parts of locomotives, but will be a definite handicap for freight cars. Real promise for a forward step will come if it is found that a liquid quench can be used, for then it should be possible to develop low-cost lightweight parts for rather general use, either wrought or cast.

If this step is feasible then a number of secondary issues will come up, such as the best way to use the cheap hardening elements carbon and manganese, the use of molybdenum to raise the draw temperature and avoid or minimize temper brittleness, the best melting practice to be used for combined results, and the use of intensifiers for the heavier sections. This art is very potent and every effort should be made by the railroads to use it, when feasible, to reduce weight and costs.

While the NE steels have played a glorious role in our war effort, there are a few precautions that the railroads might well keep in mind when considering possible applications. The railroads are a carbon-steel industry. As they adopt alloy steels, if they do, they will need equipment, control, and supervision which is capable of handling alloy steels. It is not a simple matter for an industry, whether manufacturing, fabricating, or consuming, to change from a carbon-steel to an alloy-steel basis; but the other side of the picture is that, when favorable, it is a tremendously profitable thing to do. A

tangible asset will be the past experience of the railroads in handling hot metal in forging, heat treatment, etc.

The problem of freight cars is not so simple that it can be solved by the use of any one steel for all types of cars in all types of services. Each road has a special problem for each car type in each type of service. The choice of materials to meet these conditions ranges from open hearth steel to the mild-alloy high-strength steels and light aluminum alloys. Since the price paid for steel is so significant here, it may be profitable to analyze the differential between the open-hearth grade and the alloy grades in reference to freight-car requirements.

Metallurgical Aspects of Quality and Price

Only part of the differential in cost is accounted for by the alloy content of the latter, an important part coming from the melting and deoxidation practice to produce a fine-grained, nonaging condition of the high-strength steel. This contrasts with the open-hearth and copper-bearing grades, which have always been rimmed steel for which no extra is required. There is no doubt that a fine-grained steel has better all-around properties than the same steel in the rimming quality, but if the application does not require (or justify) the nonaging steel, considerable money is uselessly expended. On the other hand, the mild alloy steels offer, in addition, considerable improvement in corrosion resistance, and that property cannot be conferred to a useful degree on steel except by alloy additions. The effect of alloy additions is also fortified by judicious deoxidation practice. The cost is also bound to reflect the requirements for surface, and here it is well to bear in mind that rejections in the rolling of flat stock are apt to be higher for fully killed steels than for rimmed or semikilled.

These various metallurgical factors should be balanced against the specific requirements, and true economy dictates that no metal quality be bought unless it is really needed for the application. If it were found, for example for some freight cars, that the fully killed condition were not needed and the superior corrosion resistance of the best mild-alloy steels could not be utilized, then the roads might well consider the use of a semikilled steel with just enough carbon and the cheaper alloys to raise the strength to the proper level and still keep the steel cheap.

Is Welding Being Pushed Too Rapidly?

By regulating the rolling mill practice it is also often possible to secure improved structures to meet the requirements. This latter type of treatment of the problem of freight car bodies appears not to have received the attention it deserves but has been highly successful in other applications. In one such case it was necessary to have greater strength in a weldable steel and yet the economics were such that every cost in steel making that did not pay for itself in either fabrication or service had to be avoided. The result was a definite improvement over the open-hearth grade which has been highly satisfactory in regular large-scale commercial production over a number of years. Obviously this steel does not have all the good properties of the more expensive types, but this experience shows that for applications which do not require the ultimate in forming, nonaging, and low temperature properties, it is possible to work out a composition and steel-making practice to give a superior product. By taking care that each item of cost in steel making is justified for the particular product being made,

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Flexible Control Plan for Lumber

Designed primarily to assure military needs, order L-335 has been amended and extended to the entire industry—Quarterly quotas provided for the railways

THE primary purpose of the W. P. B.'s new blanket lumber control is to meet any unforeseen military requirements of lumber and at the same time to cause the least disruption of normal trade practices. Blanket controls covering all species will become effective August 1, and Order L-335 as amended June 23, will be extended to all users of lumber, wholesale and retail distributors, and all but the smallest sawmills.

Of all the regulatory orders emanating from the government agencies, Order L-335 in its amended form, probably is one of the clearest that has ever been issued. Its arrangement, form and language are clear and concise. From its introductory paragraph, pointing out the need of lumber control in conjunction with the fulfillment of requirements for the defense of the United States, to its final paragraph stipulating that, except as otherwise stated, this order applies to all deliveries and receipts of lumber after July 31, 1944, and all orders placed at any time which call for deliveries after that date, the new control order is precise and specific. Couched in language and terms that are familiar to the average buyer and seller, the order applies to all lumber consumers—from the largest railroad down to the individual householder who wants a new board for his back stoop.

A Flexible and Practical Plan

The new controls will cancel most of the present species restrictions on lumber and will apply to all kinds of production except that of farmers from their own wood lots (these controls will be set up later by the War Food Administration). Lumber quotas for consumers will be assigned quarterly. The plan is flexible; it does not seek to bring supply and demand into exact balance, since that is impossible, but it is designed to adapt the demand to the supply.

Accepted at its face value, the new plan promises equitable distribution of lumber based upon the supply available. It places a "ceiling" on purchases; therefore, the problems connected with its operation will devolve largely upon the consumers. A few weeks' operations should bring to light any hidden "bugs" in the plan, and if these develop they can be removed.

While the success of the new control depends upon many factors, the chief of these are that: (1) Claimants must file their true requirements, (2) claimants must resist impulses and temptations to inflate their requirements, and (3) since the plan does not include ways and means of increasing lumber production, every worthwhile means must be taken by individual consumers to conserve lumber and timber in every possible way.

Allied successes in Europe, says J. Philip Boyd, director, Lumber and Lumber Products division, W. P. B., may step-up the demand for lumber and aggravate the already serious lumber shortage. Hence, the need for an over-all control is all the more imperative. It is estimated, for instance, that from 500 to 1,000 carloads

of lumber will be required to rebuild and re-equip the port of Cherbourg. If the retreating Nazis are able to carry out extensive demolition, temporary military rehabilitation requirements will be tremendous, as the Allied armies advance and consolidate their positions.

Demand Persists in Excess of Supply

The consumption of lumber has exceeded production for several years and the deficit has been made up by large withdrawals from stocks. These stocks are now so low that further withdrawals cannot be made; for example, the requirements for the third quarter (1944) as originally filed under L-335, exceed the estimated supply by 1,500,000,000 f. b. m. The working of the new control, in restricting allocations to a specific relationship to needs and supply, is illustrated by the 9,152,000,000 f. b. m. allotment for the third quarter (1944) (after requirement cuts) which is equal to the estimated supply for that period.

Gross lumber stocks at mills and concentration yards totaled 4,426,017,000 f. b. m. at the end of the first quarter (1944), a decline of 3.3 per cent from December 31, 1943, according to W. P. B. In the East, stocks increased 1.8 per cent during the first quarter and in the West they declined 12.6 per cent. Figures on all lumber stocks reveal a sheer drop from 17,100,000 f. b. m. at the first of 1941, to 7,284,000,000 f. b. m. at the beginning of 1944.

The nature of the lumber industry, Mr. Boyd declared recently, prevented the adoption of a control formula comparable to that for steel. Of the country's 28,461 commercial sawmills (1942 U. S. census) 25,977 were located east of, and 2,484 west of the Rocky Mountains. Most of the Eastern production comes from small mills; whereas 90 per cent of the Western lumber is sawn by large mills. Total eastern production in 1942 (most of which was in the South) was 20,500,000,000 f. b. m.; 14,500,000,000 f. b. m. of which came from mills producing less than 5,000,000 f. b. m. a year and whose average annual production was less than 600,000 f. b. m. The remainder, 6,000,000,000 f. b. m., was sawn by mills that are not considered large by western standards.

About 90 per cent of the West's 15,500,000,000-f. b. m. production in 1942, was the output of mills that produced 5,000,000 f. b. m. or more a year. Fully three-quarters came from mills that produced 25,000,000 f. b. m. or more, annually and 49 per cent came from mills cutting 50,000,000 f. b. m. or more a year.

The Importance of "Peckerwood" Mills

On the basis of 1942 production, it is expected that one-third of the 1944 lumber production will come from very small mills. Recognizing the difficulties involved in attempting to establish control over these "peckerwood" mills, the Lumber and Lumber Products division also realized that any form of control that neglected this

source, and covered only two-thirds of the lumber production, would be inadequate and unfair.

The effectiveness of the new control is emphasized by the recognition of and the solution for this very problem, for the new plan establishes control over the movement of lumber through distributors' hands as well as mill production. About 40 per cent of the country's lumber is handled through distribution yards (lumber for military requirements, housing, construction and agricultural uses); and control at these points will corral a large proportion of the lumber originating with the "peckerwood" mills.

With effective control of both mills and distributors, the order provides that the small sawmills will sell either on direct authorization or to distributors. The distributors, in turn, will have to sell on certified orders, except for specific quantities which will be allocated for uncertified orders to take care of small consumers. For the most part, the larger mills will receive directions by species, requiring them to set aside certain amounts for direct military use and specifying the percentage of production to be used for certified orders, before uncertified orders can be accepted. Quantities to be set aside for military orders will be established by percentages, and will vary from one area to another and from species to species, according to the needs.

Conspicuous among the exceptions to the general definition of "lumber" are the words "mine ties and railroad crossties (sawed or hewed)." This change from the wording of the original order (as predicted in *Railway Age* June 17) should serve to scotch any of the rumors of the dire things in store for tie timber and tie producers under the new lumber control. Apparently the inclusion of crossties in the original definition of lumber in L-335—at the insistence of some of the W. P. B.'s statisticians—had no real significance insofar as the railways and the tie producers are concerned, and its elimination should tend to reduce blood pressure in some quarters.

How Class I Consumers Will Get Their Lumber

The amended order defines a Class I consumer as one who has been granted an authorization to receive lumber on Form WPB-3640, or who expects to need 50,000 or more f. b. m. of lumber in a quarter. The order provides that every lumber distributor may extend certified orders, which he has accepted, and receive an amount of lumber (from a sawmill or another distributor) not to exceed the total accumulated certified orders accepted (either on past or future orders for delivery). While there is no time limit within which orders must be extended, a distributor must not extend the same certified order more than once. Any wholesale or retail distributor, actively engaged in selling lumber prior to May 1, 1944, and who had a lumber inventory at that date, may apply to the W. P. B., on Form WPB-3813, for authority to place certified but unrated orders with sawmills or other distributors. When duly authorized to receive lumber, these distributors may use the certification provided in paragraph (q) (4) of order L-335 as amended. Distributors may also be authorized, by directions issued under the new order, to receive additional lumber.

Certification of Orders

All purchase orders for lumber must be certified by endorsing or attaching the proper certification form as prescribed by the order. Verbal and telegraphic orders must be confirmed and certified immediately, and in the

case of the latter, the certification may be included in the telegram or be confirmed by letter. Lumber suppliers, who receive certifications, must keep them in their files for inspection by government officials.

The certificate that must be used by Class I consumers for rated orders reads as follows:

The undersigned consumer certifies to the supplier and to the War Production Board that this lumber, together with all other lumber for which he has requested delivery, does not exceed the amount he has been authorized by the War Production Board to receive under Order L-335, with the provisions of which he is familiar, and that the use of any rating shown on this order is authorized.

..... Consumer
Date..... Duly authorized official

Certified, but undated, orders for Class I consumers require a different certification which is as follows:

The undersigned certifies to the supplier and to the War Production Board that he is a Class I consumer and that this lumber, together with all other lumber for which he has requested delivery within the quarter in which delivery of this lumber is requested, does not exceed the amount he has been authorized by the War Production Board to receive under Order L-335, with the provisions of which he is familiar and that this order is unrated.

..... Consumer
Date..... By..... Duly authorized official

Preference Ratings

The new control does not assign any preference ratings. If a consumer has a rating for production materials, it may be used to get the lumber that is to be incorporated in the product. If a consumer has a rating (except an AA-5 MRO) to obtain lumber for maintenance, repair or operating supplies, he also can continue to use that rating to procure lumber for such purposes. Persons who had ratings to get lumber under Order M-208 may not use those ratings, and action has been taken to revoke the order as of August 1. According to amended Order L-335, any person entitled to use a preference rating for lumber procurement also must use the certification prescribed for rated orders since the preference rating alone is not sufficient. Moreover, the use of any rating assigned by a certificate, preference rating order, or regulation is subject to any restrictions that are contained in the instrument assigning it.

Sawmills may deliver lumber to consumers or distributors on properly certified orders (both rated and unrated). Nothing in the order restricts the delivery of lumber from one sawmill to another, but a sawmill must not deliver lumber to either consumers or distributors or withdraw material for its own use, from its stock, on the basis of uncertified orders, unless the mill is permitted to do so by directions or directives. Sawmills that are distributors may transfer lumber from "sawmill" to "distributor" stocks provided that the regular procedures governing the delivery of lumber from sawmills to distributors are followed.

Definite provisions are made to govern the acceptance and sequence of filling lumber orders by sawmills. Any consumer or distributor who has placed orders with lumber suppliers and is authorized, under this new order, to place lumber orders, may accept delivery after July 31, provided that such orders are validated by furnishing the supplier with the certification that ordinarily would be used if the order was placed after that date. All consumers who are authorized to receive specific quantities of lumber during the third quarter, must charge all lumber received after June 30, against their total authorizations for the third quarter. If consumers are unable to validate orders already placed, for delivery after July 31, those orders must be cancelled by notifying the supplier. Furthermore, sawmills and distributors are instructed by the order to treat any order, which requests delivery next August or September, as an uncertified order, provided that it has not been validated before July

20. Validation, under these provisions, may be handled by telegraph, and all orders calling for delivery after July 31, and properly validated before July 20, must be scheduled by sawmills, on the same basis as if they had been certified when originally received.

Except as otherwise required by Order L-335 as amended June 23, PR-1 and PR-3 continue to govern the use of ratings and the acceptance, scheduling and filling of orders placed with sawmills and distributors. All other applicable orders and regulations of the W. P. B. also remain in effect where they are not inconsistent with the new order.

Structural Materials

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the most advantageous or economical material is procured.

Welding has become so prominent that it deserves a few special words. For successful application of a material it is necessary to study all phases of the problem. These are: (1) the engineering design, (2) the steel, (3) fabrication, including welding, and (4) service requirements. Obviously this is a group effort. Of these four, Points (1) and (3) are thought to be quite well handled, while Points (2) and (4) have not received the close and precise attention they deserve. In new or proposed applications which involve new engineering and fabrication, Point (4) should be very capably studied, while Point (3) must be so managed that it satisfies both (1) and (4). Some very sad failures have occurred when (2) was neglected or improperly handled, yet that does not necessarily mean that a more expensive steel is needed. With persistent and conscientious study, even the common tonnage steels can be whipped into shape to do a truly noteworthy job. With this technique a medium carbon-manganese steel of the tonnage variety has been used for several important products which are welded and then heat-treated for high strength. So successful has this been that many hundreds of thousands of tons of this steel have been so processed. This same technique might be applied with equal advantage in railroading.

Of Ships and Boilers

This illustrates the viewpoint of a wise engineer who once commented: "If I were a metallurgist I would concentrate my efforts on the tonnage steels. There is where the best prospects lie." This requires a study of steel making with close cooperation between the manufacturer and fabricator or user to establish the best practice for melting, deoxidation, and rolling, the most economical composition, and proper inspection. To keep the manufacturing cost in line, emphasis is placed on the points that really count and concessions are made on all others. The result is the cheapest steel that will do the job and a positive control of necessary quality is made sure.

The brittle ship experiences have caused some to question if welding is not being pushed too rapidly for railroading. There is nothing wrong with welding ships if done properly and if the design is right and the steel is properly made. There can be plenty wrong with welded ships if the design does not allow for stress distribution and if the steel is inadequate to handle the somewhat unorthodox (i. e., unsuspected) stresses at the temperatures at which these ships have broken up.

Welding as applied to boilers differs from the ship situation in that when stresses are applied—by steam—the temperature is raised so that low-temperature brittleness is avoided. In other words, steel that might fail in a ship could be satisfactory in a steam boiler. Of course this does not hold for outdoor structures or for parts which cool down in winter to dangerous temperatures. Examples of such failures are the so-called brittle bridges in Belgium, made of basic Bessemer steel, and the hydrogen storage tank in Schenectady.

The obvious step to take to improve the situation, in so far as steel is concerned in the failure, is to apply a properly killed steel which does not become too sensitive in winter climates. In other words, since the rigid welded construction lacks the automatic stress-relieving mechanism of riveted construction, the situation requires particular attention to the steel, Point (2). This is merely a matter of applying metallurgical principles, long known, but often neglected. Incidentally, another advantage of the liquid quench and draw for heat-treating steel, is a decided improvement in toughness at low temperatures. This would hold for couplers, drawbars, and the like which may be highly stressed when at low temperatures.

The Economy of Large Runs

The railroads have worked toward standardization and interchangeability of many replaceable parts. This may have been due mainly to practical operating consideration, but another reason—that of reducing the costs—suggests the extension of this practice. This has been emphasized recently by General Young and we reiterate only to say that freezing a design means that dies, fixtures, and shop practice can be used which would be too costly if only a few parts were to be made. This is a very potent way to secure improved quality of parts, because better materials can be afforded when the cost of shaping them is reduced. The need for this treatment appears to be particularly urgent for the important locomotive forgings.

Machining is another important item of cost that is amenable to metallurgical treatment. By controlling the grain size and structure, and, when feasible, by the manipulation of the chemical composition of the material, it is often possible to improve the performance in machining and reduce the costs. Where the condition of the machined surface is important, it is also frequently possible to gain considerable benefit from adjustment of the structure. Once the necessary controls are known, the shop practice can be set up on the basis of the improved performance.

Especial attention should be given to hidden clues, features not evident on the surface. This works both ways. The engineer tries to talk to the metallurgist in a common language, that of specifications, couched in the words and figures of the ordinarily made mechanical tests. This is a translation from what he really has in mind, which is often a combination of fabricability, serviceability, and cost. The metallurgist in turn translates the specifications, on the bases of these conventional tests, into certain compositions and methods of processing that will meet the tests, but not necessarily meeting the optimum combination the engineer really wants. The metallurgist should scrutinize the true requirements of the service, and the engineer should take care that the metallurgist does acquire a full and detailed understanding of the service required, to the end that needless attributes are not called for and that the tests imposed are those that really evaluate serviceability.

Railroads-in-War News

Job Insurance Bill's Provisions Analyzed

Railroads point out the public must pay for employees' exceptional benefits

The Association of American Railroads has prepared a leaflet analyzing some features of the so-called Railroad Social Insurance Bill (H. R. 4805) which would be so costly, it points out, that "there is a very real danger" that even the enlarged payroll tax rates contemplated in the bill would be inadequate, with the result that, in order to protect the solvency of the whole railroad pension system, either the railroads' customers or the nation's taxpayers would be called upon to make an additional contribution for the support of benefits much more generous than are accorded under the general social security system applying to workers not employed by the railroads.

Sickness Insurance at R.R. Expense—

The two particularly costly changes which the new bill would make in the existing railroad retirement and unemployment insurance system, according to the booklet, are, first, "a general scheme of compulsory life insurance for the sole benefit of the survivors of the men—but with half the 'premium,' in the form of taxes, paid by the railroads"—and, second, "an entirely new line of insurance for sickness and accidents in no way connected with or resulting from employment, at the sole expense of the employers."

General distribution is being given the publication through individual railroads, the Shippers Advisory Boards, the National Industrial Traffic League, and the Railway Business Association, in order to reach the shippers and consumers of the country, who, it asserts, although they do not enjoy benefits on a comparable scale, under the general social security legislation, must ultimately bear the added cost of transportation that would result from the proposed higher payroll taxes—unless it be put upon the general taxpayer.

Injury to Traffic and Employment—

The nature of the changes proposed in the bill has been indicated in *Railway Age* in connection with reports of hearings held by the House committee on interstate and foreign commerce which appeared in the issues of June 10, page 1126, and May 27, page 1034, among others. Only supporters of the bill have been heard so far, but it is expected that the railroads' views will be presented to the committee after the Congressional recess terminates.

Taking up its discussion of the new

compulsory life insurance system that would be incorporated in the railway employee pension system under this bill, the leaflet points out that, "despite the fact that they have no possible relation to employment on the railroads, half of the cost of the added insurance benefits for the survivors of railroad employees would be borne by the companies. The effect would be, therefore," it asserts, "either increased charges to the public, or decreased employment on the railroads as a result of impaired ability to meet the transportation competition of the future—results beneficial neither to the railroad owners, the railroad employees, nor the public."

Why a Favored Class?—To the argument that it is "socially desirable" that survivors of railroad employees should receive life insurance benefits, the leaflet maintains that the "real question" is, "Who is responsible for providing such protection, and who should pay for it?" The analogy to the survivorship payments now made under the general social security system, from which railroad employees are set apart for more generous treatment, fails, according to the booklet, because the pending bill would set up "a special, more liberal and costly plan of *class insurance*," in contrast to the general plan of social insurance for the benefit of workers generally, with the cost resting on all such workers and their employers. Where taxation under the general social security law is at present one per cent each on employers and employees, and limited to a total charge of 6 per cent in 1949, unless the increase is postponed by Congress, taxation under the pending Railroad Social Insurance Bill would be 5¼ per cent each on employers and employees for 1945 and would total 12½ per cent in 1951, it goes on to say.

Furthermore, the A. A. R. publication explains, the proposed legislation would add to existing law relating to unemployment compensation, which is based on the theory that the employee is entitled to some income when the employer is unable to afford him his customary employment, "an entirely novel conception of unemployment insurance." Under these proposed provisions, it adds, "at the sole cost of the employer and with no contribution whatever from the employee, the employee would be insured not only against lack of employment for reasons connected with the industry but also against sickness and accident in no way connected with employment."

Other People Have to Buy Such Protection—Such a "free gift," according to the booklet, departs from the original theory of unemployment insurance, as applied to railroad employees, to set up "nothing less than a broad and general scheme of

(Continued on page 92)

Army Railroaders on Job Invading France

Burpee commands forces which are developing invasion's supply lines

The Army's Military Railway Service is on the job in the invasion of France—under the direction of Brigadier General Clarence L. Burpee, according to advices from the headquarters of the European Theater of Operations.

Under General Burpee's direction, the official statement reveals, "a Military Railway Service is moving across France, laying down and operating the railroad lines which are speeding United States forces on their mission to drive the Nazi hordes from every European citadel." General Burpee is in charge of the initial organiza-



U. S. Signal Corps Photo

Brig. Gen. Clarence L. Burpee

tion of all U. S. Army railroad lines on the European continent.

"Starting from the first Allied terminal to rise again in the Cherbourg zone," the statement further discloses, "the United States Army railroad soldiers began to lay and rebuild tracks, operate and repair locomotives and cars and handle all rail movements of men and material to every fighting sector."

General Burpee (then a colonel) previously served in Italy and, before that, in North Africa, under Brigadier General Carl R. Gray, Jr., director general of the Military Railway Service in the Mediterranean Theater. For his conduct in the North African campaign, General Burpee

was awarded the Legion of Merit—to which was added an Oak Leaf Cluster for his outstanding service in the Italian campaign.

In civilian life, General Burpee's last previous railway position before joining the colors was that of superintendent of the Jacksonville district of the Atlantic Coast Line.

Born at Jackson, Ga., September 12, 1894, General Burpee was educated in public and high schools at Jacksonville, Fla., and entered railroad service in 1911 as a yard clerk on the Atlantic Coast Line.

He served that company thereafter successively as switchman, yard conductor, yardmaster, general yardmaster and terminal trainmaster, becoming superintendent of the Jacksonville terminal in 1929. During World War I General Burpee was in the A. E. F. as a member of the Marine Corps.

General Burpee entered active military service in the present war on July 11, 1942, when he was assigned as colonel in command of the 703rd Railway Grand Division. The "703rd" participated in the invasion of North Africa and was assigned to the advance echelon of the western task force which landed in Casablanca in November, 1942. General Burpee was then placed in charge of the operation of the French Morocco railroads.

In the fall of 1943 he was assigned to the Fifth Army (Transportation Section) for the invasion of Italy and he and his railroad troops made the landing at Salerno. He was soon appointed director of the Italian State railroads and served in Italy until December 2, 1943. It was while in that responsibility that he first clashed head-on with Fascist Party officials and a now famous incident took place. An Italian official approached General Burpee, said that he represented the Fascist Party and had come for the party's "cut" on the work being done by the Railway Shop Battalions in repairing locomotives and railroad cars.

In a quiet tone of voice for which he is noted, General Burpee ended that interview shortly with, "There is no longer any Fascist Party and neither you nor anyone else gets any 'cut.'"

General Burpee's Aides—The railway forces for the Continental invasion have been designated the "Second Military Railway Service." Executive officer of the Second M. R. S. is Colonel Everette H. Qualls of Nashville, Tenn., formerly assistant director, Bureau of Motor Carriers, I. C. C. Major James W. Conway of Lakewood, Ohio, formerly with the Erie, is the administrative officer. Lieutenant Colonel G. J. Mulick, formerly general superintendent of the Union Pacific at Omaha, is in charge of the personnel of the operating and shop battalions which comprise this command. Lieutenant Colonel William T. Elmes, formerly division engineer of the New York Central, with home at Beaver Falls, Pa., is in charge of roadway maintenance work equipment, and signaling. Colonel Sidney L. Bingham of the New York subway system is in charge of stores and procurement. Lieutenant Fay L. King of Sabuela, Iowa, formerly with the C. M. St. P. & P., will have charge of equipment maintenance.

O. D. T. Limits Government Use of Special Trains

As a further step in conserving rail transportation facilities, the Office of Defense Transportation this week tightened its restrictions on wartime government use of special trains, special cars and extra sections.

The change was effected through amendment of an existing order (ODT No. 24), by which railroad passenger schedules have been "frozen" for the last year and a half. Under the original order as previously amended, special trains, special cars and extra sections could be operated at the request of government departments or agencies.

The latest amendment, effective July 10, restricts, in brief, the use of such equipment to transportation of members of the armed services, prisoners of war, and government-recruited workers.

Use of special trains, special cars and extra sections for the transportation of other than these groups is prohibited except on express authority from the O. D. T.

New Director of Equipment Division at W. P. B.

C. B. Bryant, whose appointment as director of the War Production Board's Transportation Equipment Division was announced in the *Railway Age* of July 1, is on leave of absence from the Southern



C. B. Bryant

where he is assistant to vice-president, in charge of research and tests. At W. P. B. Mr. Bryant succeeded George M. Betterton, who has returned to his position of general purchasing agent of the S. P.

Mr. Bryant was born November 1, 1900, at Washington, D. C., and was graduated in 1922 from Johns Hopkins University, School of Engineering and Chemistry, receiving a B.S. degree. During the following eight years he was employed by the Portland Cement Association as a field engineer, and from 1930 until 1936, he was in the service of the Maryland State Roads Commission as a materials engineer.

On November 16, 1936, Mr. Bryant entered railroad service with the Southern as engineer of tests with headquarters at Alexandria, Va. He remained in that position until November 1, 1943, when he was appointed assistant to vice-president. Among various other committee activities,

Mr. Bryant is a member of the Subcommittee on Engineering and Mechanical Research of the Railroad Committee for the Study of Transportation, the post-war study group sponsored by the Association of American Railroads and operating under the chairmanship of A. A. R. Vice-President R. V. Fletcher.

Report Iron Ore Movement Well Ahead of Last Year

A report of a meeting in Washington, D. C., last week of the Iron and Steel Transportation Industry Advisory Committee sponsored by the War Production Board brought out the information, according to a W. P. B. statement, that the cumulative deliveries of iron ore via the Great Lakes, as of June 26, amounted to 27,000,218 gross tons, as compared to 23,661,800 gross tons reported in the same week last year.

While this statement indicated that delivery of ore by Great Lakes vessels is on schedule, the industry was urged by W. P. B. representatives to exercise constant vigilance and policing to see that the movement is maintained at the highest practicable rate. By continuing and expanding the early transportation of ore from the lower lake ports now the industry can contribute to the release of a larger supply of open top cars for the movement of coal later in the season, the W. P. B. statement continued.

The committee was told that the railroads are handling increased loads of ore and mill products without serious congestion, although reports from the industry indicated that on occasions shipments were held up for inspection and approval. The shipping delay was reported to be slight and the billing problem was said to be at a minimum.

Simplifies Price Schedule on Iron and Steel Scrap

Revision of the price schedule covering iron and steel scrap "so as to provide the industry with one regulation giving in simplified form all applicable provisions of the original schedule, together with amendments and official interpretations issued to date," was announced by the Office of Price Administration on July 1. The revision, effective July 5, came in Maximum Price Regulation No. 4 (Iron and Steel Scrap) which supersedes Revised Price Schedule No. 4.

The O. P. A. announcement explained that the regulation, in its new form, "has been arranged so that each section deals with one specific subject." It added that "although a few price changes have been made, they are all minor"; for "no basic change in either price levels or the method by which maximum prices for scrap are computed is made."

The announcement listed the "four major changes" as follows:

1. Basing point prices are established for several grades of scrap previously priced by letter. These include welding rod butts, shafting, No. 1 railroad cast steel, and wrought iron. For prepared wrought iron scrap, there is established a price of \$6.50 per gross ton above the dealer No. 1 heavy melting steel base price. This is

\$3 per gross ton higher than the price previously authorized, the increase being approved because of "the critical shortage of wrought iron scrap," and in recognition of "the higher costs involved in preparing and segregating wrought iron as compared with other grades of steel scrap."

2. An adjustment is made in preparation fee differentials between scrap rails in random lengths and short rails. The principal result of this is to provide a higher charge for preparation of shorter length rails. The fee for cutting rails to length of 18 in. or under is increased from \$2.50 to \$3.25 per gross ton. This has been accomplished by reducing the price of scrap rails in random lengths and rails 3 ft. in length 50 cents per gross ton and increasing the price of rails 18 in. in length 25 cents per gross ton. The fee for cutting rails to 3-ft. lengths remains the same, because the 50-cent reduction in price applies both to scrap rails and rails 3 ft. in length. The grade of rails 2 ft. in length has been eliminated.

3. Separate specifications that covered cast iron scrap of railroad origin and cast iron scrap of dealer and industrial origin have been combined so that one set of specifications covers cast iron scrap regardless of origin.

4. Railroad basing points have been eliminated and the basing points for steel scrap of dealer and industrial origin have been established as basing points for steel scrap of railroad origin. The former dual system included 25 basing points covering railroad scrap and 38 covering dealer and industrial scrap. The latter now cover all scrap regardless of origin. As 21 of the former railroad scrap basing points were identical with 21 dealer and industrial scrap basing points, this change, in effect, adds 17 new basing points for railroad scrap. The other four railroad basing points—Philadelphia, Pa., Wilmington, Del., Kansas City, Mo., and Wheeling, W. Va.—have been eliminated.

"The historical price relationship by which the railroad scrap basing point price is \$1 higher than that of dealer and industrial scrap is not changed by this step," the O. P. A. announcement said. "In a few cases railroads may get increased prices for their scrap as some of the new dealer and industrial scrap basing point prices will give them a higher net return. However, only on insignificant tonnage of scrap will be thus affected."

Among other provisions of the new regulation is that which embodies an interpretation "clarifying the freight charges which may be added to the maximum on-line prices of iron and steel scrap of railroad origin."

O. D. T. Reports Changes It Made on Puerto Rican Road

In announcing that the American Railroad of Puerto Rico had been returned to private operation July 1 (as noted in *Railway Age* of July 1, page 47), after having been operated since May 17, 1943, by the Office of Defense Transportation, the O. D. T. disclosed that Director Johnson, in advising the President that this action be taken, had outlined some of the steps taken during the period of government

operation to meet the road's wartime problems.

While the wage controversy which led to government operation was resolved last December, through allocation of a lump-sum increase of \$100,000 per year in the wages of certain employees, as awarded by the War Labor Board, the plan for return of the property to private ownership was not worked out for some time. During O. D. T. operation, wages of non-operating employees were increased 10 per cent, Col. Johnson pointed out, and "operating efficiency was improved by instituting United States railroad practices." The Interstate Commerce Commission system of accounting was adopted, and commission engineers were assigned to make a valuation of the property. The road's motive power was amplified by the purchase of 12 diesel locomotives, financed through an equipment trust by the Reconstruction Finance Corporation.

Young Heads Joint Resources Board's Transport Group

In addition to his duties as deputy director of the Office of Defense Transportation, Brigadier General Charles D. Young has recently agreed to accept the chairmanship of the Transportation Equipment Committee of the Combined Production and Resources Board. Other members of the committee are Sir Walter Venning, director general of the British Supply Mission in the United States, representing the United Kingdom; and R. A. C. Henry, vice-president of Montreal Light, Heat, and Power Consolidated, representing Canada.

Job Insurance Bill's Provisions Analyzed

(Continued from page 90)

sick-and-accident insurance for railroad men and women with the premiums in the form of taxes paid entirely by the companies, and hence really by the public which uses rail transportation." In other words, it says further, the bill proposes, instead of returning the surplus of about \$500 million accumulated for unemployment insurance payments to those from whom it came—the railroads—in the form of reduced unemployment insurance taxes in the future, rather to distribute it among the employees, "who contributed not one cent toward it, in the form of the new benefit of sick-and-accident insurance—the kind of insurance that people other than railroad employees are expected to buy for themselves."

Summing up the effect of the proposed changes in railroad social insurance legislation, the official A. A. R. booklet points out that they would: (1) So broaden and increase the benefits to be paid under an already under-financed system of retirement pensions as to raise grave doubt of its permanent strength and solvency; (2) load a further charge on railroad payrolls, far exceeding those for any other industry, with no corresponding benefit whatever to the roads; (3) through handicapping the roads in meeting the uncertain competitive situation ahead, impair their

continued ability to render transportation service to the public and to provide jobs and pay wages and taxes; and (4) add to the cost of transportation that must be paid by the users of transportation, that is, "by all of the people who do not themselves enjoy benefits on such a scale and of such liberality."

Would Cancel Meeting of Short Line Association

Directors of the American Short Line Railroad Association, meeting in Washington, D. C., on June 28, directed the officers to take steps to cancel the Association's annual meeting which had been scheduled for October 25 and 26 at Chicago. The officers will proceed to secure authority of the membership for the cancellation through letter ballot.

The action of the directors was based on present travel conditions. They also delegated authority to the executive committee to name a secretary-treasurer of the Association, the position having been vacant since January 1, when Joseph H. Hunt resigned to become president and general manager of the East Erie Commercial.

Calls for More Diligence in Handling Oil

Calling attention to the "sharply increased military demands" for oil and petroleum products, particularly aviation gasoline, Col. J. Monroe Johnson, director of the Office of Defense Transportation, has pointed out that oil companies and railroads are expected to give tank cars loaded with such "vital war supplies" preference over all other tank car shipments.

The tank car supply situation is still "acute," Col. Johnson said, and he called attention to the necessity for strict adherence to the O. D. T.'s tank car "freeze" order, under which no tank cars may be removed from the East Coast service without the approval of the O. D. T. Tank Car Division, even for diversion to the West Coast movement. Oil companies were reminded that they are required to carry on loading and shipping operations seven days a week, and that available tank cars are limited to a one-day supply for each company.

In view of the decline in the number of tank cars in the East Coast service, which in the month ended June 16 dropped from 63,452 cars to 60,143, the O. D. T. director at the same time urged the railroads involved to reduce the turnaround time of all tank cars, thus saving "many tank car-days" and making a material contribution to the movement of military supplies.

More Conventions Called Off

Continuing the Office of Defense Transportation's efforts to discourage conventions and other meetings not directly essential to the war effort, Director Johnson recently pointed out that among the organizations that have canceled scheduled summer conventions are the New York State Bar Association, the American Jewish Congress, various midwestern units of B'nai B'rith, the New York State Motorbus Association, and the Rainbow Division of the A. E. F. of World War I.

GENERAL NEWS

"Uniform" Rate Case Briefed for Farmers

They are told to balance advantages and disadvantages of proposed panaceas

Farmers and agricultural businessmen have been advised to give "a great deal of careful attention" to the advantages and disadvantages of any change in the existing interterritorial freight rate situation before deciding which, if any, alternative arrangement would be "in the interests of agriculture." This warning is the conclusion of a relatively complete analysis of the class rate controversy in the latest issue of the monthly review of the "Marketing and Transportation Situation," prepared by the Bureau of Agricultural Economics of the United States Department of Agriculture.

Rate Differences Tabulated—After briefly outlining the existing railroad freight rate structure of the United States, this study goes into a discussion of interterritorial rates, developing the point that maximum first-class rates on interterritorial shipments are substantially higher than the Official Territory rates. In addition to tabulating illustrative maximum first-class rates on a mileage basis for the Official and Southern territories, as compared to the interterritorial rates, it reviews the relative "average revenue" levels of rates in the three territories as compiled by the Board of Investigation and Research on the basis of studies by Dr. Ford K. Edwards of the Interstate Commerce Commission staff.

From this basis it goes on to point out that, although it has been contended that average unit costs of furnishing service are considerably lower on roads in the East than elsewhere, because their traffic density is greater, the effects of such differences in traffic density are at least partly offset by other factors, with the result that the average rate of return on investment reported by railroads in the East, South and West is much more uniform than would be expected by the sole consideration of traffic density variations.

Disparities, Possibly Unimportant—Taking the position that "disparities do exist in freight rates among and between the several regions, particularly in the case of class rates, although these differences are perhaps less important with respect to the proportion of traffic covered than many people have thought," the authors of the study examine briefly some of the alternative methods which have been suggested for securing greater uniformity in class rates.

First named among such methods is that of individual rate proceedings before the commission; this has not led to any funda-

mental change in the situation during a long period, the report concludes. A second possibility is establishment of a definite rule that interterritorial rates shall not exceed, distance considered, the rate level in the destination territory; this, it suggests, would lead to many instances of long-and-short-haul discrimination, an increased use of distance scales, and the practical abolition of grouping or blanketing rates.

Financial Troubles from Uniformity—Adoption of a uniform classification, with rate scales varying in the different territories only in accordance with territorial differences in the nature of traffic, carrier costs and revenue needs, is then discussed; this alternative would not settle the controversy about equal rates on traffic moving between territories with different rate levels, the report remarks. Finally it refers to the proposal to establish uniform rates throughout the country, or, as a modification of that idea, generally uniform scales "modified only in case of significant departures from the average of transportation costs and conditions." While the use of such a basic national rate scale would avoid the necessity of constructing interterritorial class rates, it explains, it might give rise to "grave financial difficulties" for some railroads, unless its adoption were accompanied by "greater unification of rail lines."

From this summary of the controversy now before the commission, the authors of this study draw the conclusion that "the problem is not simple, that any solution which may be suggested is likely to have its disadvantages as well as its advantages," and that snap judgments should not determine the position to be taken by farmers and businesses dependent on agriculture with respect to the issues underlying the controversy.

Harold S. Vanderbilt Honored

At a "Recognition Dinner" held at the recent annual convention of the New York State Y. M. C. A., a number of outstanding Y. M. C. A. laymen in that state were placed on an "honor roll," because of their unusual activities in the movement. Among those honored was Harold S. Vanderbilt, a director of the New York Central and a member of its executive committee. The citation read as follows:

"Harold S. Vanderbilt carries forward the traditional interest of his famous family in the work of the Railroad Y. M. C. A. In 1875 his uncle, Cornelius Vanderbilt, organized the Railroad Branch in New York City and later became the donor of the first Grand Central Branch. Mr. Vanderbilt has been chairman of the Grand Central board of managers since 1930. His far-sighted and energetic leadership have been instrumental in making the present Grand Central building the most complete of its kind in the country."

See Slight Rise in 3rd-Quarter Traffic

Shippers' Boards expect loadings to be 0.8 per cent above last year

Freight car loadings in the third quarter of 1944 are expected to be slightly above actual loadings in the same quarter in 1943, according to estimates compiled by the 13 Shippers' Advisory Boards.

On the basis of those estimates, loadings of the 28 principal commodities will be 9,948,356 cars in the third quarter of 1944, compared with 9,871,654 actual car loadings for the same commodities in the corresponding period in the preceding year, or an increase of 0.8 per cent. Seven of the 13 boards estimate an increase in carloadings for the same quarter of 1944 compared with the same period in 1943, but six estimate decreases.

Six Districts Expect Decrease—The tabulation below shows actual loadings for each district in the third quarter of 1943, the estimated loadings for the third quarter of 1944, and the percentage of increase or decrease.

Shippers' Advisory Boards	Actual loadings third quarter 1943	Estimated loadings third quarter 1944	Per cent increase
New England	190,013	185,726	2.3-d
Atlantic States	1,022,409	1,034,166	1.1
Allegheny	1,230,131	1,260,628	2.5
Ohio Valley	1,182,333	1,215,755	2.8
Southeast	961,330	935,382	2.7-d
Great Lakes	669,981	688,552	2.8
Central Western	346,912	363,337	4.7
Mid-West	1,345,303	1,333,666	.9-d
Northwest	961,008	959,298	.2-d
Trans-Missouri			
Kansas	496,434	496,054	.1-d
Southwest	699,571	680,956	2.7-d
Pacific Coast	452,328	475,388	5.1
Pacific Northwest	313,901	319,448	1.8
Total	9,871,654	9,948,356	.8

The 13 boards expect an increase in the third quarter, compared with the same period one year ago, in the loading of 15 of the commodities listed, but a decrease in 13.

Among those commodities showing the greatest increases are the following: Agricultural implements and vehicles other than automobiles, 31.1 per cent; citrus fruits, 13 per cent; all canned goods, 10.7 per cent; fertilizers, all kinds, 10.4 per cent; poultry and dairy products, 10 per cent; and manufactures and miscellaneous, 9 per cent.

Commodities for which decreases are estimated and the amount of the decrease include the following: Cement, 22.7 per cent; gravel, sand and stone, 18.6 per cent; sugar, syrup and molasses, 18.5 per cent; cotton, 15.5 per cent; brick and clay products, 11.6 per cent; and petroleum and petroleum products, 10.3 per cent.

5 Mos. Net Income Was \$259,000,000

Net railway operating income
for same period was
\$451,582,440

Class I railroads in the first five months of this year had an estimated net income, after interest and rentals, of \$259,000,000, as compared with \$378,082,930 in the first five months of 1943, according to the Bureau of Railway of the Association of American Railroads. The five-months net railway operating income, before interest and rentals, was \$451,582,440, compared with \$603,213,127 in the corresponding 1943 period.

May's estimated net income was \$59,000,000, compared with \$85,731,956 in May, 1943; while the net railway operating income for that month was \$98,505,213, compared with May, 1943's \$129,478,115. May was the twelfth consecutive month in which the net earnings of the carriers showed a decline, the A. A. R. statement pointed out.

Rate of Return 4.5 Per Cent—In the 12 months ended with May 31, the rate of return averaged 4.51 per cent, compared with 6.13 per cent for the 12 months ended with May, 1943.

The five-months gross totaled \$3,836,596,178, compared with \$3,599,009,270 in the same period of 1943, an increase of 6.6 per cent. Operating expenses amounted to \$2,559,311,318, compared with \$2,178,467,009, an increase of 17.5 per cent. May's gross was \$804,055,622, compared with \$759,272,572 in May, 1943; while operating expenses for the month totaled \$526,767,253, compared with \$454,327,068.

Class I roads in the five months paid \$744,940,303 in taxes compared with \$739,047,887 in the same period in 1943. For May alone, the tax bill amounted to \$161,678,151, an increase of \$2,416,615 or 1.5 per cent above May, 1943. Fifteen Class I roads failed to earn interest and rentals in the five months, of which 10 were in the Eastern district, one in the Southern region, and four in the Western district.

In the East and South—Class I roads in the Eastern district in the five months had an estimated net income, of \$112,000,000 compared with \$149,938,094 in the same period of 1943. Their net railway operating income was \$189,965,466 compared with \$243,236,147.

Operating revenues in the Eastern district in the five months totaled \$1,686,702,689, an increase of 5.2 per cent compared with the same period in 1943, while operating expenses totaled \$1,190,899,517 an increase of 15.6 per cent.

In the Eastern district for May, the estimated net income was \$25,000,000 compared with \$36,153,706 in May, 1943; net railway operating income amounted to \$41,447,545 compared with \$54,543,473.

The Southern region's estimated net income, for the five months was \$46,000,000 compared with \$66,871,618 in the same period of 1943. Its five-months' net railway operating income was \$74,809,992 compared with \$95,852,371.

Gross in the Southern region in the five

months totaled \$561,375,536, an increase of 3.2 per cent compared with the same period of 1943, while operating expenses totaled \$342,187,466 an increase of 13.5 per cent.

For May alone the estimated net income in the Southern region was \$9,000,000 compared with \$13,219,453 in May, 1943; net railway operating income amounted to \$14,975,752 compared with \$19,182,199.

Earnings in the West—Class I roads in the Western district in the five months had an estimated net income of \$101,000,000 compared with \$161,273,218 in the same period of 1943. Their net railway operating income was \$186,806,982 compared with \$264,124,609.

Operating revenues in the Western district in the five months totaled \$1,588,517,953 an increase of 9.4 per cent compared with the same period in 1943, while operating expenses totaled \$1,026,224,335 an increase of 21.2 per cent.

The Western district's estimated net income for May was \$24,000,000 compared with \$36,358,797 in May, 1943; net railway operating income amounted to \$42,081,916 compared with \$55,762,443.

CLASS I RAILROADS—UNITED STATES

	Month of May 1944	1943
Total operating revenues	\$804,055,622	\$759,272,572
Total operating expenses	526,767,253	454,327,068
Operating ratio —per cent ..	65.51	59.84
Taxes	161,678,151	159,261,536
Net railway operating income (Earnings before charges)	98,505,213	129,478,115
Net income, after charges (estimated) ..	59,000,000	85,731,956
Five Months Ended May 31, 1944		
Total operating revenues	\$3,836,596,178	\$3,599,009,270
Total operating expenses	2,559,311,318	2,178,467,009
Operating ratio —per cent ..	66.71	60.53
Taxes	744,940,303	739,047,887
Net railway operating income (Earnings before charges)	451,582,440	603,213,127
Net income, after charges (estimated) ..	259,000,000	378,082,930

Recall Privilege on New Buses Waived by O. D. T.

The Office of Defense Transportation on July 1 made effective simplifications in the procedure necessary for operators to obtain new motor buses, the result of which is that such buses, while still subject to O. D. T. allocation, will be released unconditionally when applications are passed. Heretofore, the O. D. T. explained, buses were released on the condition that they might be recalled by the O. D. T. for transfer to some other area where a "more serious need" developed.

While bus allocations will continue to be made under the terms of War Production Board Limitation Order L-101, applicants for buses no longer will be required to fill out form ODT-LT-1, it was announced. Concurrently, filling out certain application forms for bus bodies, the effect of which was to make specific W. P. B. release of the equipment prerequisite to its delivery, no longer will be required, although applicants still will be expected to fill out the application form for the chassis, according to the O. D. T.

Assembly Rates Not Only for Forwarders

Other shippers and shipper
groups also eligible,
I. C. C. rules

Assembling rates which motor carriers are authorized to publish under Part IV of the Interstate Commerce Act are not restricted to freight forwarders but can legally be applied to other persons or groups of persons, the Interstate Commerce Commission has ruled. The report by Commissioner Aitchison is in I. & S. Docket No. M-2180, and it follows the recommendations of Examiner T. Leo Haden's proposed report which was noted in the *Railway Age* of October 30, 1943, page 705.

Forwarders Objected—The tariff in issue was that wherein Transamerican Freight Lines, Inc., undertakes to assemble at Chicago shipments for "freight consolidators" who consolidate such shipments into rail carloads for movement out of Chicago. In upholding the tariff the commission rejected contentions of the Freight Forwarders Institute, the Central States Motor Freight Bureau, and the Middle Atlantic States Motor Carrier Conference. The decision drew a dissent from Commissioner Splawn, who thought that the majority had enlarged upon the section authorizing assembling rates (section 408) "to such an extent as to authorize unlawful discrimination between shippers."

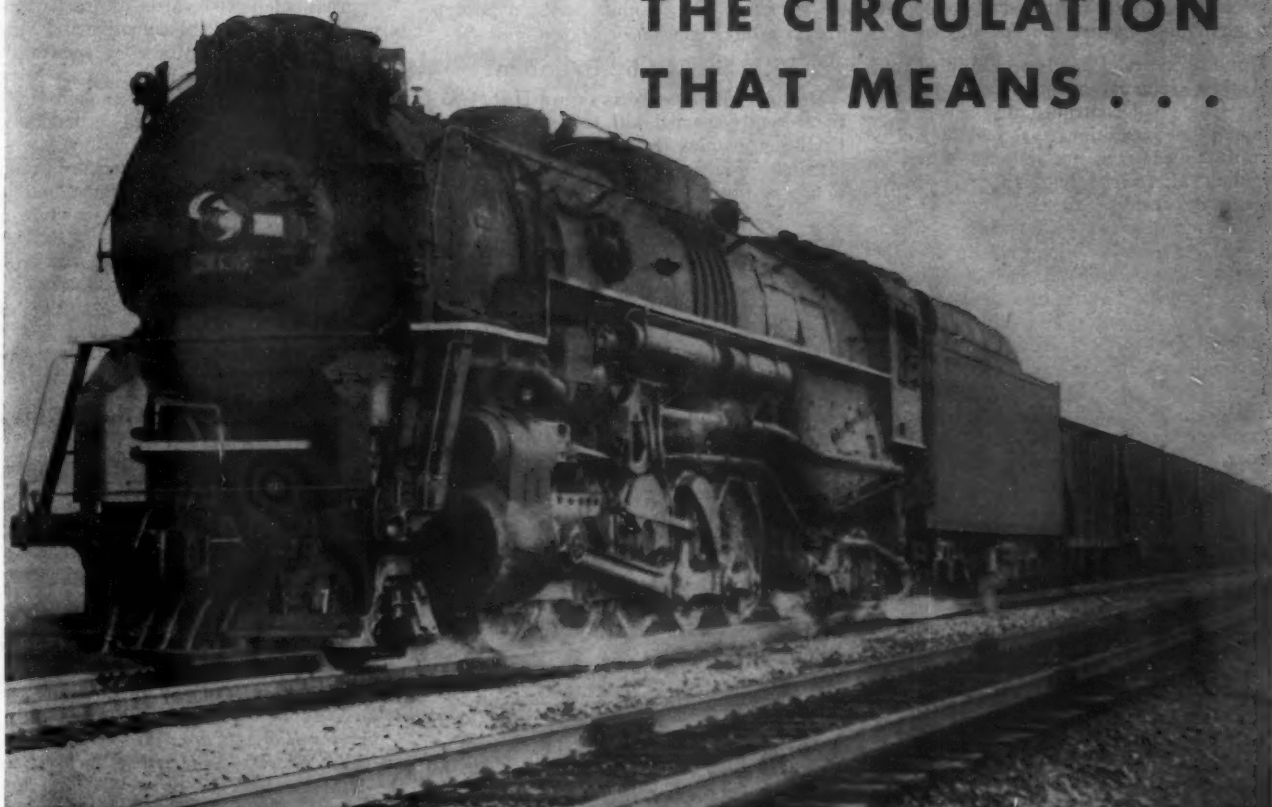
Commissioner Mahaffie joined in the Splawn expression, while Commissioner Rogers did not participate in the disposition of the proceeding. Meanwhile, Commissioner Lee, in a brief expression "concurring in the result," agreed that the majority report was "in accord with the intention of Congress as expressed in section 408." He added that "whether that section should be amended so as to bring about a different result in situations such as are here presented is, of course, a matter for Congress to determine."

"Consolidators" Defined—In publishing the assembling rates, which are generally 85 per cent of the applicable class rates from the respective points of origin to Chicago, Transamerican defined "freight consolidators" to include "the operation of a shipper, or a group or association of shippers, in the consolidating of freight for themselves or for members thereof, on a non-profit basis, for the purpose of securing the benefits of the carload rates from Chicago, Ill., to final destination," or "the operation of a warehouseman or other shipper agents in the consolidating of pool cars, whose services and responsibilities to the shippers in connection with such operations are confined to the terminal area in which such operations are performed," or "others who employ or utilize the instrumentalities or services of Transamerican Freight Lines, Inc., under like conditions."

The majority report sketches the history of section 408 which authorizes motor carriers to publish assembling [and distribution] rates to supplant the joint-rate arrangements between forwarders and motor carriers which had been condemned

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Now, more than ever, the continuous hauling of heavier freight at higher speeds is of vital importance to the preservation of our American way of life.

The railroads of America have brought the handling of freight to a point of unprecedented efficiency. Over the past two decades average

freight-train speed has increased 45 per cent, and a day's freight-train run has been almost doubled.

Modern Lima Super-Power Steam Locomotives have an important part in this achievement. Because of their greater drawbar horsepower and faster speeds they are helping America to "keep 'em rolling."

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

by the commission. The section stipulates that the assembling and distribution rates are for the use of forwarders "and others, who employ or utilize the instrumentalities or services of such common carriers under like conditions." It was the majority's interpretation of this language in the light of pertinent Congressional reports and pronouncements which prompted it to uphold the tariff and dismiss the complaint.

Complainants' Position—Complainants and their supporting intervenors, on the other hand, had contended that the phrase "under like conditions" should be construed "to embrace not only the physical handling of freight but other conditions necessarily incident to the transportation of this kind of traffic by forwarders, which are not required of shippers or groups or associations of shippers, such as the issuance of through bills of lading, publication of through rates, and filing of surety bonds and policies of insurance. . . ." In rejecting such contentions, the report did, however, call for a clarification of the tariff's definition of "freight consolidator," characterizing the one quoted above as "loosely constructed, too long, and not sufficiently explicit." If prompt action is not taken in this connection, the commission "will give further consideration to what action, if any, is warranted."

In expounding his narrower interpretation of section 408, Dissenter Splawn discussed also section 402 (c) which exempts from regulation "the operations of a shipper or a group or association of shippers, in consolidating or distributing freight for themselves or for the members thereof, on a non-profit basis, for the purpose of securing the benefits of carload, truckload, or other volume rates." He noted how the majority assumed that this provision exempts the shippers or associations here involved from regulation, and continued to complain that it nevertheless accorded them the "benefits provided in section 408."

"Section 402 (c)," Mr. Splawn went on, "ensures to shippers that they will not be subject to regulation as forwarders in the exercise of a right, which shippers have previously had, to consolidate freight in order to get the benefits of carload, truckload, or other volume rates, but it makes no mention of assembling and distribution rates referred to and defined in section 408 which, obviously, are in a wholly different class." To the dissenting commissioner, the phrase "under like conditions" in section 408 means not only "similarity in physical service" but submission as well "to other conditions imposed on the forwarders."

Damages Signals to Make Up Gambling Losses

A signalman of the Pennsylvania at Chicago was held to a federal grand jury at Chicago on June 29, following his confession that he wrecked block signaling relay boxes so that he could get extra work and overtime with which to make up gambling losses. The employee was Raymond H. Stemmer, in the employ of the Pennsylvania since 1925, who pleaded guilty to a charge of attempting to wreck trains. According to agents of the Federal Bureau of Investigation who arrested Stemmer, his

acts not only endangered train travel but delayed troop and regular trains.

Stemmer confessed to five acts of vandalism in Chicago from May 10 to May 29, each of which delayed trains from five minutes to an hour. In four instances he either opened the case with a key and tampered with the equipment or set fire to the case. On another occasion he set fire to a block station.

Bills Signed by President

President Roosevelt has signed H. R. 4935, the recently-enacted bill to provide for a Civil Aeronautics Board study of "multiple taxation of air commerce." The legislation was the outgrowth of the recent Supreme Court decision holding that the *ad valorem* personal property tax levied by a state in which an airline corporation is "domiciled" may legally be applied to all that company's planes, except those "continuously without" that state.

The President has also signed the bill to extend the Emergency Price Control Act of 1942, and House Joint Resolution 227. The former includes a provision relieving Economic Stabilization Director Fred M. Vinson of the authority he formerly had to pass on railway wage adjustments. H. J. Res. 227 extends to June 30, 1945, the period during which the Railroad Retirement Board may pay railroads for the work of bringing up to date the service records of prospective applicants for annuities under the Railroad Retirement Act.

Santa Fe "Chief" Derailed

Four persons, including the fireman and three passengers, were killed and several were injured when the steam locomotive and 12 of 14 cars of the westbound "Chief" of the Atchison, Topeka & Santa Fe were derailed 20 mi. west of Flagstaff, Ariz., at 11:37 p.m. on July 3. The accident occurred as the locomotive came out of a four-degree curve and, while the cause of the accident was not definitely known, an investigation has been undertaken to deter-

* * *

mine whether it was caused by excessive speed or an object dragging under the locomotive.

At this point on the line, new 131-lb. rails had been laid in May, 1944, and the track within recent weeks had been surfaced and the rails double-spiked. The speed restriction at this point is 55 m.p.h.

Approximately 600 yards of track were torn up by the derailed locomotive and cars. In order not to delay the movement of traffic while the wreckage was being cleared, a shoo-fly track was laid, over which trains were operated around the disabled portion of the line.

The locomotive of the derailed train turned over on its side and came to rest facing in the direction opposite to which it had been traveling. Four mail and express cars piled up on the locomotive and fifth car—a sleeping car—ran into the locomotive and mail and express cars. Of the last seven cars of the train, three turned over and four were derailed but remained upright.

Recommends Lower Meat Rates from Mid-West to Coast

Reduced rates on meats and packing-house products from packing plants in nine Mid-Western states to destinations in nine Pacific Coast and intermountain states have been recommended to the Interstate Commerce Commission in a proposed report by Examiner George J. Hall. The proposed report covers 11 complaints, the title proceeding being No. 28978, Geo. A. Hormel & Company et al. v. The Atchison, Topeka & Santa Railway Company et al.

The complainants are Mid-Western packers and interests supporting them while the opposing intervenors are like interests in mountain-Pacific and Pacific-Coast territories. As the examiner put it, "the livestock and slaughtering interests in the two great surplus livestock and meat-producing areas of the United States are here actively opposing each other." He recommends that the commission make a finding of unreasonableness with respect to the assailed rates from origins in Illinois, Wisconsin, Minnesota, South Dakota, Iowa, Missouri, Kansas, Nebraska, and eastern Colorado to destinations in California, Oregon, Washington, Idaho, Utah, Nevada, Arizona, New Mexico, and Montana.

Proposed New Scale—Following through from that finding, Mr. Hall sets up a scale of rates which he would prescribe as reasonable rates for the future. The recommended basis involves a modification of the so-called 2595 scale prescribed by the commission in *Meats and Packing-House Products*, 136 I. C. C. 651; 156 I. C. C. 299, for application between points in the Southwest, and from western trunk-line territory to the Southwest; and by the commission's Division 1 in *Wolff Packing Co. v. A. W. Ry Co.*, 146 I. C. C. 141, for application from Topeka, Kans., to destinations in the Southwest.

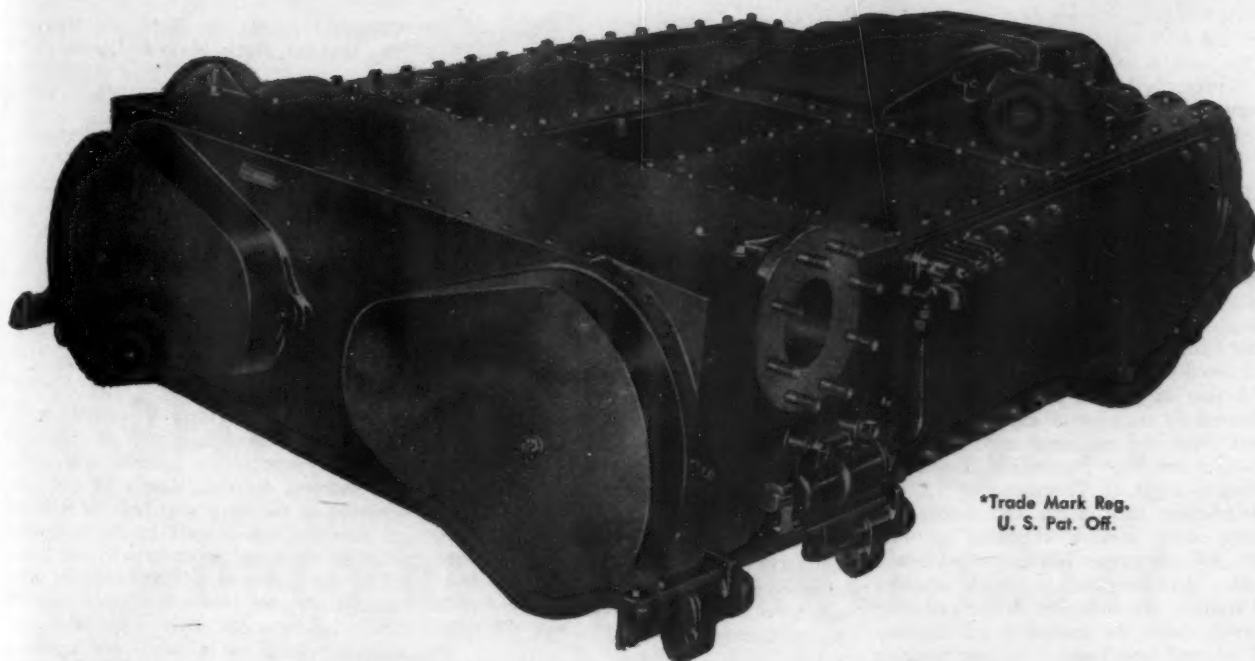
The examiner described his proposed basis in this way: "These rates are arrived at by regrading the 2595 scale on packing-house products at 4 cents instead of 3 cents per 100 miles beyond 800 miles, and making the rates on fresh meats 118 per cent of those on packing-house products, sim-

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ilar to the basis now observed in the 2595 scale. At 1,800 miles the prescribed basic scale on packing-house products will be about 115 per cent of the 2595 scale and 131 per cent of the livestock cattle scale. Differentials of 15 per cent will be added to this basic scale for hauls in mountain-Pacific territory, observing the same boundaries between that territory and other territories and also methods of figuring distances as are now observed in respect of rates on livestock from and to the same points. This will result, for example, in a rate of 152 cents on fresh meat from Wichita to Los Angeles instead of 142 cents under the 2595 scale increased 15 per cent for the haul in mountain-Pacific territory. The prescribed differential therefore amounts to 25 per cent because it is felt that the 2595 scale is too low for hauls over 800 miles."

O. D. T. Begins Truck Rationing

Issuance of certificates for purchase of new commercial motor vehicles has been started by the Office of Defense Transportation, under the program placing the rationing of all equipment of this type solely in the hands of that agency after July 1, as reported in *Railway Age* of July 1, page 51. Action on pending applications will be facilitated by transfer of experienced personnel from the rationing and inventory branch of the War Production Board, according to an O. D. T. statement.

Attachment third axles and dollies are exempt from further rationing at this time. All other types of commercial motor vehicles, including trucks, truck tractors and trailers, are embraced in the rationing program, with the exception of taxicabs and integral type buses. Anyone desiring to obtain a new commercial motor vehicle must file an application for a certificate of transfer with the O. D. T. district office nearest to his home office or principal place of business. The application form will be provided by O. D. T., but it will be permissible to use Form WPB-663 until September 1. The usage classification list employed by W. P. B. will continue in effect.

Representation of Employees

The Brotherhood of Locomotive Firemen & Enginemen has supplanted the Brotherhood of Locomotive Engineers as the Railway Labor Act representative of locomotive engineers employed by the Texas-New Mexico, according to the result of a recent election certified by the National Mediation Board. In another recent election, the Brotherhood of Railroad Trainmen defeated the challenging Switchmen's Union of North America and retained the right to represent Yazoo & Mississippi Valley yardmen.

Meanwhile the Boston & Maine's technical engineering employees, cost and valuation engineers, draftsmen and designers, have chosen the International Federation of Technical Engineers, Architects & Draftsmen's Unions, American Federation of Labor. And N. M. B. has dismissed without prejudice an application of the United Transport Service Employees of America for an election to determine who may represent the St. Paul Union Depot

Company's clerks, ticket sellers, office boys, messengers, gatemen, baggage, parcel room employees, operators of office or station devices, telephone, switchboard and elevator operators. These employees are now represented by the Brotherhood of Railway Clerks, and the board was unable to find that the application involved "a dispute as to representation of the recognized craft or class of clerical, office, station and storehouse employees."

C. N. J. Seeks More Money for Lighterage

In a complaint naming some 250 railroads as defendants, the Central of New Jersey has appealed to the Interstate Commerce Commission for higher lighterage and car-floatage allowances out of the present joint freight rates, and also asked an order requiring other New York harbor lines to stop accepting the present allowances, said to be below cost, for such port delivery services. The dispute is with other railroads, and the amount of the rates paid by shippers is not involved in the complaint. The principal New York harbor roads named as defendants are the Baltimore & Ohio and its affiliate, the Staten Island Rapid Transit; the Delaware, Lackawanna & Western; the Erie; the Lehigh Valley; the New York, New Haven & Hartford; the New York Central; the New York, Ontario & Western; the New York, Susquehanna & Western and the Pennsylvania.

The Jersey Central declared its lighterage services have been costing an average of more than \$3.15 a ton, and its car-floatage services more than \$2.70 a ton, while the customary allowance is only 88 cents a ton.

Personnel Needs 102,000 on June 1

Needs for additional personnel for the railroad industry were somewhat smaller on June 1, numbering 102,000 compared with 107,000 on May 1 and 93,000 on June 1, 1943, according to the United States Railroad Retirement Board. The estimate for the entire industry is based upon a tabulation of reports from 185 employers which showed a shortage of 96,000 workers. By mid-May, employment on Class I railroads had risen to 1,425,000, about 12,000 more than in mid-April and 34,000 more than at the 1943 summer peak.

The end of the school year in some localities and the arrival of 5,900 Mexicans during May helped fill some of the railroad jobs. In contrast with the overall decrease, however, shortages in the far west and southwest were somewhat larger than a month earlier. From comparative tabulations of additional needs reported by a group of 40 large employers and a group of 62 relatively small employers it also appeared that needs of the smaller employers increased by about 5 per cent and those of the larger employers decreased about 5 per cent.

Shortage of Journeymen Persists—Data from employers reporting in both months indicate that needs were smaller in six of the occupational groups. The major part of the decrease from May to June was

in the laborer group. About two-thirds of the reported reduction in this group was in needs for additional track laborers. Fewer additional shop, stores, and station and platform laborers, but more ice handlers were wanted.

Due principally to reduction in reported needs for switchmen and firemen, the number of unfilled train and engine jobs was somewhat smaller. There were fewer unfilled jobs for helpers and apprentices both in the shops and in maintenance of way and structures, but the need for additional skilled trades journeymen remained as large as on May 1.

Personnel Needs of Railroads Reporting for Both May and June

Occupational group	Needs reported		
	Number	Per cent of Total	Per cent of May
1. Executives, professional men, telegraphers, and clerks	4,057	4.2	93.6
2. Trainmen and enginemen	6,306	6.6	94.4
3. Skilled trades journeymen	14,436	15.0	100.9
4. Skilled trades helpers and apprentices	13,386	13.9	99.0
5. Laborers	55,488	57.8	94.5
6. Attendants, cooks, porters and waiters	1,514	1.6	89.6
7. Miscellaneous	840	0.9	91.8
Total	96,027	100.0	95.3

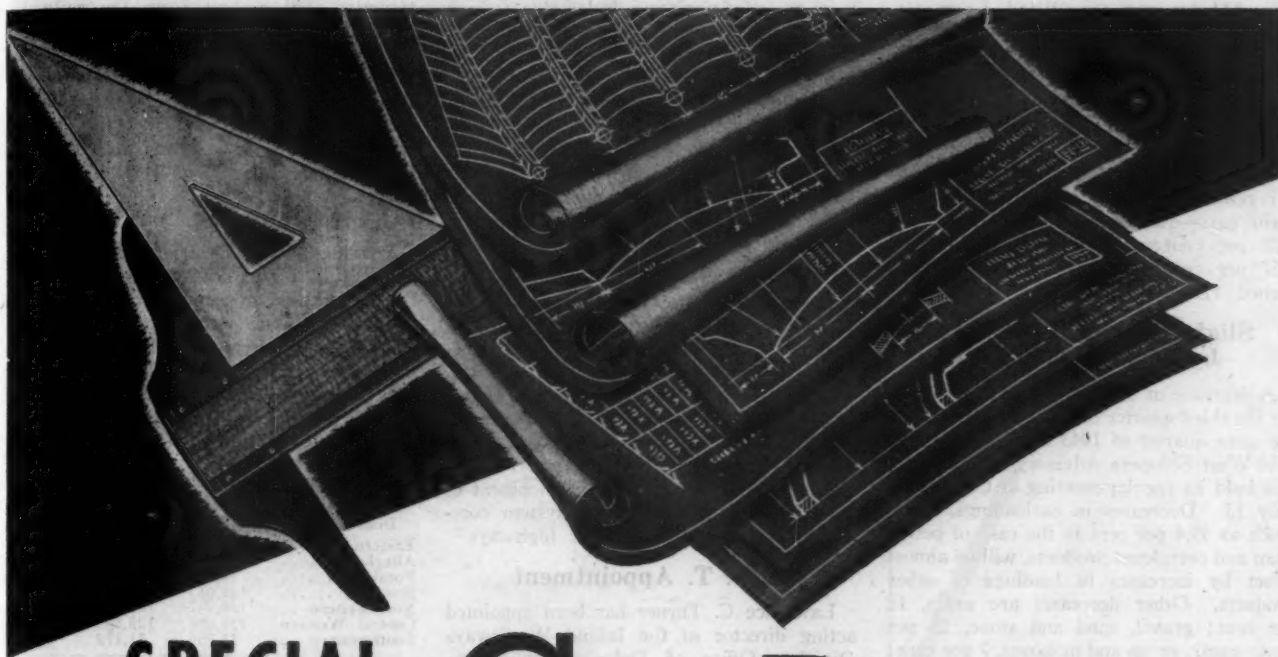
Regional Variations—Personnel needs of employers reporting in both months were smaller in four of the geographical areas. The sharpest decrease, nearly 11 per cent, occurred in the northwest but the numerical decrease was largest in the northeast. In these areas and around the Great Lakes the largest decreases were in needs for additional laborers. In the northwest and the Great Lakes areas there were also substantial reductions in needs for trainmen and enginemen; in the Great Lakes and the northeast areas for helpers and apprentices; and in the Great Lakes area for clerks.

In the southeast, more than half the decrease reported was due to decreased needs for additional trainmen and enginemen. In the far west, needs were slightly higher for all but laborers while in the southwest, the reported increase resulted from more numerous openings for train and engine workers, skilled trades journeymen, and laborers.

Equipment Depreciation Rates

Equipment depreciation rates for the Denver & Rio Grande Western and the Central Vermont are among those prescribed by the Interstate Commerce Commission in a recently-issued series of sub-orders in its general proceeding, Depreciation Rates for Equipment of Steam Railroad Companies.

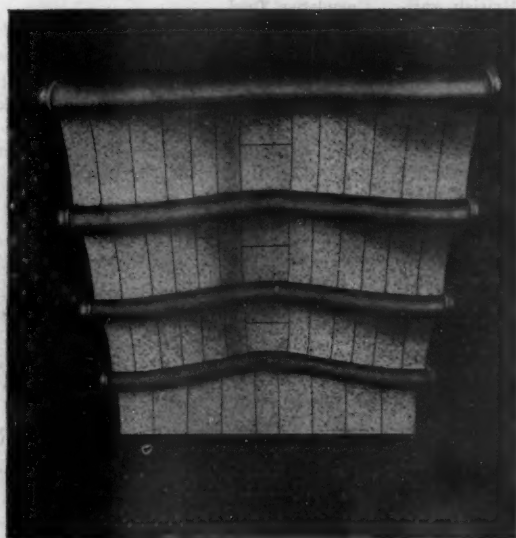
The rates for the D. & R. G. W.'s standard-gage equipment are as follows: Steam locomotives—new, 3.13 per cent, secondhand, 4.1 per cent; Diesel-electric switchers, 4.85 per cent; Diesel-electric road freight locomotives, 6.4 per cent; freight train cars—new, 3.17 per cent, secondhand, 3.86 per cent; passenger train cars—new, 5.67 per cent, secondhand, 3.75 per cent; work equipment—new, 3.14 per cent, secondhand, 3.67 per cent; miscellaneous equipment—new, 14.52 per cent. The rates for the road's narrow-gage equipment are: Steam locomotives—new, 3.1 per cent, secondhand, 3.55 per cent; freight train cars—



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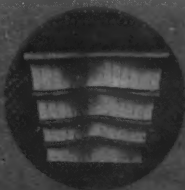
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new, 3.11 per cent, secondhand, 3 per cent; passenger train cars—secondhand, 3.27 per cent; work equipment—new, 3.16 per cent, secondhand, 3 per cent.

The rates for the C. V. are: Steam locomotives—owned, 2.83 per cent, leased, 2.96 per cent; other locomotives—leased, 3.93 per cent; freight train cars—owned, 3.98 per cent, leased, 2.68 per cent; passenger train cars—owned, 2.92 per cent, leased, 4.25 per cent; work equipment—owned, 3.57 per cent; miscellaneous equipment—owned, 11.1 per cent.

Slight Decrease Forecast by Mid-West Board

A decrease of 0.9 per cent in carloadings for the third quarter of 1944 compared with the same quarter of 1943 is forecast by the Mid-West Shippers Advisory Board which will hold its regular meeting at Chicago on July 13. Decreases in carloadings, of as much as 49.4 per cent in the case of petroleum and petroleum products, will be almost offset by increases in loadings of other products. Other decreases are grain, 12 per cent; gravel, sand and stone, 15 per cent; sugar, syrup and molasses, 7 per cent; cement 20 per cent; brick and clay products, 20 per cent; and lime and plaster 10 per cent. The decrease in grain shipments is due principally to the fact that stocks of corn on farms are almost completely exhausted and shipments will fall below normal. The decreases in gravel, sand and stone, brick, lime and plaster are due to the completion of the government's construction program while that in the movement of petroleum is due to the completion of the Big Inch pipeline beyond Norris City, Ill.

The increases include 12 per cent for livestock, 100 per cent for fertilizer, 12 per cent for canned goods, 45 per cent for agricultural implements and 7.7 per cent for manufacturers and miscellaneous items. Of these, agricultural implements and manufacturers and miscellaneous items which include critical war impedimenta, may cause concern because they require the use of a large number of flat and other open top cars.

U. S. Chamber's Members Approve Highway Report

Organization members of the Chamber of Commerce of the United States have approved in referendum voting the 13 highway policies embodied in one of the three transportation reports submitted recently by the Chamber's committee on transportation and communication. As reported in the *Railway Age* of April 1, page 654, the highway report was put forth as one which foresees "the need for a comprehensive postwar rehabilitation and development program."

Favors More Federal Intervention—

In another referendum vote on "general policy statements," the members have approved a declaration that the federal government "should prescribe minima standards for size and weight limitations applicable to commercial vehicles operating on interstate highways." This was approved by a vote of 1,735 to 389, while no other "general policy" statement had more than 46 votes against it. The latter

were recorded against a declaration (which got 2,073 favorable votes) to the effect that carriers should be allowed to deduct from taxable income amounts set aside for deferred maintenance or repair work under approval of the Interstate Commerce Commission "or other regulatory agencies." Another of the "general policy" statements adopted asserted that "continued intensified cooperation of shippers and carriers is needed to conserve transportation in wartime."

Questionnaire on "Integration"—

Meanwhile the poll of the membership has begun on the other two transportation reports, noted also in the issue of April 1. One of them deals with the control of one form of carrier by another, advocating a relaxation of restrictions in that connection. The other deals with airport facilities, recommending for the development of such facilities a "federal-aid system comparable to that employed for highways."

O. D. T. Appointment

Lawrence C. Turner has been appointed acting director of the Inland Waterways Division, Office of Defense Transportation. He succeeds Glenn E. Taylor, who has returned to the government-owned Inland Waterways Corporation as assistant to the president.

Mr. Turner, formerly freight traffic manager for Swayne & Hoyt, Ltd., steamship operators, joined O. D. T.'s waterways staff in 1942 as head of the research and permit section.

British Railways Issue War Booklet

An elaborately illustrated 74-page booklet, "designed to give the public a brief account of the work of the British railways in the fifth year of the war," has been issued by the British Railways Press Office, Waterloo Station, London, on behalf of the four British main-line railways and the London Transport Board.

Entitled "British Railways in Peace and War," the booklet's introduction gives the story of the formation of the four main line railways in 1923, namely: Great Western, London & North Eastern, London Midland & Scottish and the Southern. Relating, as well, the background of London Transport, there is discussed also railway progress "between the wars," indicating that the manner in which railways have been able to stand up to the present test is "no chance matter."

The bulk of the brochure deals with the achievements of the railways during World War II. Freight and civilian traffic are briefly discussed; there are chapters on troop transportation, executive control, equipment; while others deal with attack from the air, the staff, c. & d. service, hotel and restaurant facilities, and air services.

Postwar service is discussed, and assurance is given that when the war ends, "the railways will at once set about restoring equipment so as to bring their services back to normal needs, and they hope also to put in train as quickly as possible new developments." And, concludes the forecast, "One thing is certain . . . on the day that the Germans say they have had enough, another memorable in-

struction will go out from the railways and London Transport's headquarters to the staff at works, garages, depots and stations—to remove, as quickly as possible, all the protective fabric and black-out margins from the windows of trains, buses, trams and trolley-buses—and to 'put up the lights again all over the system.'"

Freight Car Loading

Loadings of revenue freight for the week ended July 1 had not been announced by the Association of American Railroads at the time this issue went to press.

Loading of revenue freight for the week ended June 24 totaled 881,267 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For the Week Ended Saturday, June 24			
District	1944	1943	1942
Eastern	162,122	143,319	158,064
Allegheny	193,780	155,780	186,239
Poconantas	54,501	30,013	55,858
Southern	121,083	105,705	121,969
Northwestern	134,947	132,439	140,387
Central Western	139,068	122,502	123,452
Southwestern ..	75,766	71,172	67,449
Total Western Districts	349,781	326,113	331,288
Total All Roads	881,267	760,930	853,418
Commodities			
Grain and grain products	53,333	55,610	44,066
Live stock	14,570	11,521	10,676
Coal	175,529	68,554	166,213
Coke	15,036	10,952	14,039
Forest products ..	47,641	44,858	52,351
Ore	82,088	81,101	88,167
Merchandise, l.c.l.	103,842	98,374	92,209
Miscellaneous ..	389,228	389,960	385,697
June 24	881,267	760,930	853,418
June 17	879,161	868,286	844,913
June 10	874,193	854,486	832,635
June 3	810,772	667,609	854,689
May 27	869,860	853,783	795,621

Cumulative Total,
26 Weeks .. 21,051,394 20,100,468 21,063,401

In Canada.—Carloadings for the week ended June 24 totaled 72,866 as compared with 71,999 cars for the previous week and 68,080 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
June 24, 1944	72,866	38,798
June 17, 1944	71,999	37,151
June 10, 1944	71,661	37,291
June 26, 1943	68,080	43,361
Cumulative Totals for Canada		
June 24, 1944	1,727,718	985,097
June 26, 1943	1,586,454	986,066
June 27, 1942	1,589,959	813,045

Eric A. Leslie Heads A. A. R.'s Accounting Division

Eric A. Leslie, vice-president and comptroller of the Canadian Pacific, was elected chairman of the Accounting Division, Association of American Railroads, at a June 28 meeting of the Division's general committee at New York. The election marked the second time that a Canadian railway officer has been chosen to head the accounting officers' association, the late I. G. Ogden, former C. P. R. comptroller, having served as president of the former Association of Railway Accounting Officers in 1900.

Other officers elected with Mr. Leslie are: First Vice-Chairman, L. J. Tracy, comptroller of the Union Pacific; and second

The Ideal Boiler Feed

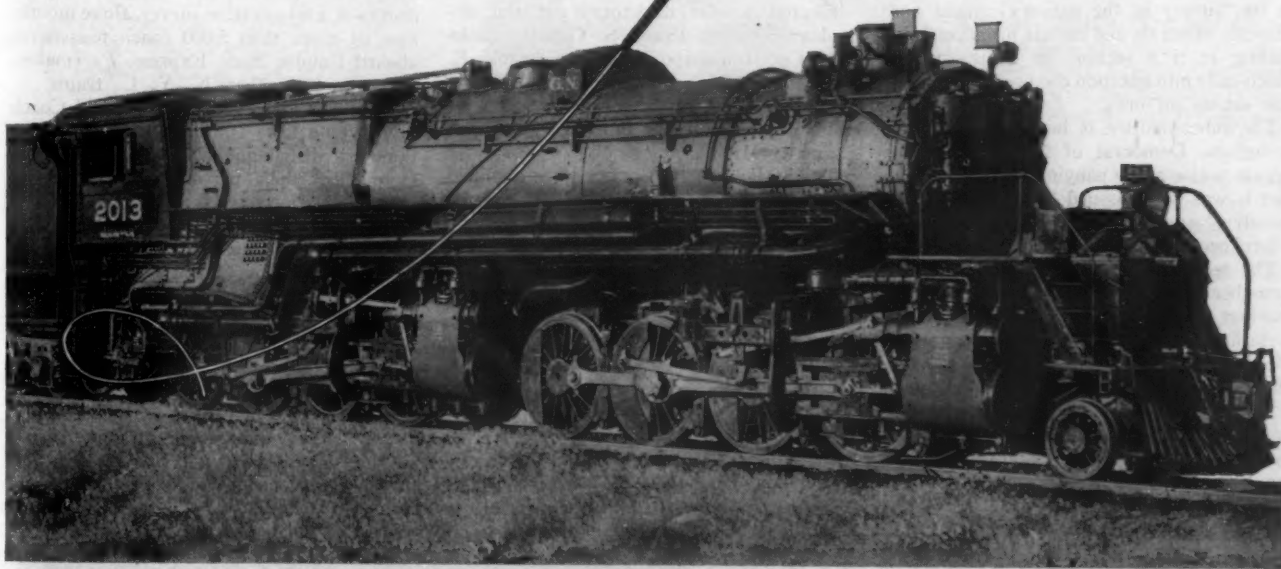
AN INJECTOR THAT OPERATES
WITH EXHAUST STEAM . . . the
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More than 20,000 of this type of
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SUPERHEATERS • FEEDWATER HEATERS
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Representative of
AMERICAN THROTTLE COMPANY, INC.
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Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

vice-chairman, R. Parke Jones, chief finance and accounting officer of the Seaboard Air Line. E. R. Ford continues as secretary. The general committee meeting at which the election took place was held in lieu of the Association's annual meeting; annual meetings have been suspended for the duration, the latest having been held in June, 1941, at Denver, Colo.

Mr. Leslie, who had been first vice-chairman since the Denver meeting, comes to the chairmanship as successor to G. T. Carmichael, vice-president and comptroller of the New York, New Haven & Hartford. The general committee also approved reports of the standing committees, and these will be published in the Division's forthcoming 58th report. The approved additions and revisions to the mandatory and recommendatory accounting rules and standard forms will be incorporated in the next issue of the Railway Accounting Rules book, to be known as the October 1, 1944, edition.

Amendment to Motor Carrier Safety Regulations

The Interstate Commerce Commission has made public an order, dated June 24, which amends its regulations covering the transportation of explosives and other dangerous articles to exempt "the transportation by motor vehicles in intrastate commerce of liquified petroleum gases . . . in containers, other than cargo tanks." However, the containers must conform to the commission's specifications.

Report Questions Freight-Rate Set-Up on Ores

The mining and minerals subcommittee of the Senate's Special Committee to Study and Survey Problems of American Small Business has issued a preliminary report on its "survey of the nation's critical and strategic minerals and metals program," including in it a section on transportation which calls into question the present freight-rate set-up on ores.

The subcommittee is headed by Senator Scrugham, Democrat of Nevada, and the release notice accompanying the report said that it was being issued "for study by the industry," and "will be subject to revision before becoming a Senate document."

The section on transportation states that a number of witnesses at the subcommittee's hearings "had much to say regarding transportation problems." "Many small mining operations and mineral deposits," it continues, "are located considerable distances from the few and widely scattered smelters, custom mills, stock piles, and purchase depots. Only comparatively high-grade ores can be mined and transported without a loss under these conditions."

Seek Subsidies for "Little Fellows"—"Freight rates in some areas are considered too high and inequitable. The established graduated rise in rates as the grade of ores and concentrates increase was judged to be entirely too sharp. In fact the whole policy of graduating freight rates according to the value of the ore has illogical and dubious aspects, and has been injurious to the mining industry. In past years some mining companies have been able to negotiate with the railroads and

secure a favorable reduction in rates. It is believed that government agencies concerned with metals and minerals production should intercede and induce the railroads to adjust their rates in order to lend more stimulus to the efforts of small producers."

The remainder of the section embodies a suggestion that the Reconstruction Finance Corporation's subsidiary, Metals Reserve Company, might go in for a bit more subsidizing in the way of absorbing transportation costs for "small producers" who lack advantageous locations with respect to markets.

Malleable Founders' Society Elects Directors; Officers

At the annual meeting of the Malleable Founders' Society at Hot Springs, Va., June 15 and 16, the following officers were elected: President, Anthony Haswell (president, Dayton Malleable Iron Co., Dayton, O.); vice-president, K. M. Smith (president, Lancaster Malleables & Steel Corp., Lancaster, N. Y.); executive vice-president, Haldwell S. Colby; and secretary-treasurer, Robert E. Belt.

The following directors were re-elected: H. Nelson Albright (Columbia Malleable Castings Corp., Columbia, Pa.); R. N. Cole (Canton Malleable Iron Co., Canton, O.); L. A. Dibble (Eastern Malleable Iron Co., Naugatuck, Conn.); R. R. Fauntleroy (Moline Malleable Iron Co., St. Charles, Ill.); C. A. Gutenkunst, Jr. (Milwaukee Malleable & Grey Iron Works, Milwaukee, Wis.); Anthony Haswell (Dayton Malleable Iron Co.); W. J. MacNeill (Federal Malleable Co., West Allis, Wis.); C. H. McCrea (National Malleable & Steel Castings Co., Cleveland, O.); and K. M. Smith (Lancaster Malleables & Steel Corp.).

Elected to the directorate of the organization were: Frank S. O'Neil (Link-Belt Co., Indianapolis, Ind.); Frank E. Shumann (Lehigh Foundries, Inc., Easton, Pa.) and James H. Smith (Saginaw Malleable Iron Div., General Motors Corp., Saginaw, Mich.).

The by-laws of the society were modified to provide for an additional office—that of executive vice-president. Mr. Colby, who was elected to that position, has recently served on the War Production Board, in Washington, in connection with the foundry and forge program. His last previous position in industry was that of divisional vice-president, Baldwin Locomotive Works, Eddystone, Pa.

Wheat Piling Up at Terminals

Lack of labor in terminal elevators is retarding the unloading of wheat and contributing to the already acute box car shortage, according to J. J. Mahoney, superintendent of transportation of the Atchison, Topeka & Santa Fe. Various government agencies are attempting to relieve this labor bottleneck, he said, and efforts are being made to obtain soldiers from camps near the crowded terminals. Permission already has been granted for an increase in wage rates for elevator and mill workers unloading grain. At the fifteen terminal and sub-terminal points in the wheat territory, he continued, the Santa Fe, on July 1,

had 1,781 cars loaded with wheat. On June 30, 488 cars were unloaded and 824 were in transit to those points. On the Oklahoma division the Santa Fe was holding 358 loaded wheat cars out of the Enid terminal to avoid blocking the yards. On the Panhandle division it was holding out 135 more loaded cars.

"The situation has been developing all week," he said. "Monday, June 26, we had 1,483 loads of wheat in the fifteen terminals and only 393 were unloaded. Wednesday we had 1,568 loads of wheat and 409 were unloaded. On the Panhandle and Plains division 78 elevators are closed because of the car shortage. There are 55,000 bu. of wheat piled on the ground on the Panhandle division and 801,000 on the Plains division. Yesterday we had 889 cars available for loading and orders for 2,955 cars."

Delay in unloading grain cars adds perplexities to the wartime dislocation of the normal car supply, Mr. Mahoney said. Invasion of France and the supplying of General Eisenhower's troops has moved large numbers of Western box cars to the Eastern seaboard. This has been brought about by the necessity for protecting the flow of war materials needed for Eisenhower, and has required the keeping in service near the Eastern seaboard of the high-grade box cars of Western ownership, designed and constructed primarily for hauling grain, flour and sugar produced in the breadbasket section.

Passengers' Wants Found Not Too Elaborate

"American travelers show themselves decidedly more conservative than the railroads which serve them," reports F. H. Baird, general passenger traffic manager, New York Central, in making known the results of a 60-question survey, three months ago, of more than 5,000 coach passengers aboard Empire State Express, Pacemaker, Mercury and other N. Y. C. trains.

Entitled "The Post-War Railroad Coach as I Would Like It," the pocket-size questionnaire distributed to passengers sought from them their personal preferences on matters relating to their comfort and travel, and dealt mainly with non-technical and service details—seating, lighting, air conditioning, smoking, windows, luggage, etc.

Completed tabulation of answers reveals men find air conditioning the most important factor in travel ease, with women indicating a preference for comfortable seats. Both men and women, smokers and non-smokers, object to smoking in coaches, recommending that it be permitted only in the smoking room at the end of new streamlined cars. Passengers generally agreed on conditioned air at about 74 degrees, except in extremely hot weather, when they specified controls should be varied in accordance with the temperature outside the car. Individual, lean-back coach seats, reserved in advance, were preferred by an overwhelming majority.

Four out of five passengers interviewed found present schedules of the trains canvassed suited their needs for arrival and departure times, and by a vote of about two to one, present train speeds won against suggested higher speeds.

"On the whole," observed Mr. Baird of the findings, "they indicated that the coach of tomorrow needs only moderate refinements on the last pre-war deluxe coaches now in use on our streamlined Empire State Express, Pacemaker, Mercury and James Whitcomb Riley."

The Central, however, will not be "com-
placent" and Mr. Baird promises the "quest for better equipment and improved service methods will go on continually in our engineering and operating departments."

I. C. C. Service Orders

Restrictions on holding for orders or reconsignment, of cars loaded with fresh or green fruits, vegetables or melons at points in the South, as set forth in Interstate Commerce Commission Service Order No. 207, have been further modified through revision of General Permit No. 2 under that order, so that such restrictions may be disregarded as to cars held at Augusta, Savannah, or Waycross, Ga., in addition to the points previously excepted (noted in *Railway Age* of July 1, page 52).

Through Service Order No. 215 the Baltimore & Ohio has been directed by the commission to unload forthwith 13 carloads of coal at Keyser, W. Va., and 21 carloads of coal at Connellsville, Pa., which have been on hand an unreasonable length of time. The order was effective June 29.

Effective July 5, Service Order No. 216 required roads moving sand, gravel, or aggregates in carloads from any point to Dalhart, Tex., for use on government construction, not to weigh such shipments on railroad track scales, except a limited number for the purpose of determining average weights.

May Truck Traffic

Motor carriers reporting to American Trucking Associations, Inc., transported in May, 2,876,902 tons of freight, an increase of 4.9 per cent over the 2,743,557 tons reported for April and an increase of 4.1 per cent over the May, 1943, figure of 2,764,100 tons. The A. T. A. index, based on the 1938-1940 average monthly tonnage of the reporting carriers, was 174.71 for May as compared with April's 172.12.

The foregoing figures, according to the A. T. A. announcement, are based on reports received from 342 truckers in 47 states and the District of Columbia. Carriers in the Eastern district reported tonnage increases of 5.2 per cent over April and 1.7 per cent above May, 1943. In the Southern region there was an increase of 3.8 per cent above April, but a drop of 4.6 per cent under May, 1943; while the Western-district tonnage was up 4.5 per cent above April and 13.3 per cent above May, 1943.

Construction

DENVER & RIO GRANDE WESTERN.—This company has obtained preference ratings from the War Production Board for materials for the construction of a plant at Pueblo, Colo., for reclaiming journal box oil and waste. The estimated cost is \$61,604.

Supply Trade

Correction

For the purpose of decentralizing Diesel locomotive servicing operations, **C. L. Olsen**, district service engineer of the Electro-Motive Division of General Motors, with headquarters at Miami, Fla., has been appointed manager of the service department for the Eastern region of this company with headquarters at New York and **Thorwald O. Robertson**, district service engineer of the Western region, with headquarters at Los Angeles, has been appointed manager of the service department for the Western region with the same headquarters, while the service department for the Central region will be directed from the plant at LaGrange, Ill. The jurisdiction of Messrs. Olsen and Robertson will be confined to servicing operations only and will not include sales, as might be implied from a news item published on page 1229 of the *Railway Age* of June 24.

Huntly H. Gilbert, vice-president in charges of sales of the **Pullman-Standard Car Manufacturing Company**, retired on June 30, due to ill health, but will continue



Huntly H. Gilbert

to be available in a consulting capacity. In addition to his position as vice-president, Mr. Gilbert has been a director and member of the executive committee of Pullman-Standard. He was born in Chicago on February 10, 1887, and was graduated from Cornell University in 1907 as a mechanical engineer. After association with several steel companies, he joined the Pressed Steel Car Company in 1912. Mr. Gilbert was granted a leave of absence for 18 months during the first world war, serving with the Army ordnance department, first as a captain and later as a major. He then returned to the company and remained until August, 1933, when he became assistant to the president of the Pullman Car Manufacturing Company, and vice-president of the Standard Steel Car Company. Upon the merger of these companies into the present Pullman-Standard Car Manufacturing Company, on December 26, 1934, Mr. Gilbert was elected vice-president of Pullman-Standard.

H. P. Smith, formerly president of the George Chemical Company, and **Thomas**

Tarpy Schulten, formerly with the General Chemical Company, have been appointed field representatives of the New York office of the Mathieson Alkali Works. York office of the **Mathieson Alkali Works**.

D. W. McGeorge has been elected vice-president and general sales manager, and **L. M. Forncrook**, secretary, of the **Edge-water Steel Company**.

The **Independent Pneumatic Tool Company**, Aurora, Ill., has been granted a third renewal of its Army-Navy "E" award.

The Stark Mills plant of the **United States Rubber Company** at Hogansville, Ga., received the Army-Navy "E" award on June 20.

The **Standard Stoker Company**, Erie, Pa., was presented with the Army-Navy "E" pennant on June 23 for outstanding achievement in the production of war equipment.

Marcel A. Cordovi, formerly research assistant, Welding Research Council of the Engineering Foundation, has been appointed research metallurgist of the **Babcock & Wilcox Tube Co.**

W. E. Bikle, chief mechanical engineer of the **Standard Railway Equipment Company**, Chicago, has been appointed manager of the company's newly opened San Francisco, Cal., office.

Henry H. Ritchotte, manager of contractor tool sales at Philadelphia, Pa., has been appointed manager of the contractor's tool division of the **Independent Pneumatic Tool Company** with headquarters in Chicago.

The **Kramer-Church Tractor Company, Ltd.** has been appointed representative of the **Caterpillar Tractor Company** in Saskatchewan, with headquarters in Regina, Sask., to succeed **Albert Olsen**, who retired July 1.

Thomas Rutherford has been appointed manager of railroad and casting sales for the **Midvale Company** with headquarters in Philadelphia, Pa., and **Truxtun R. Brodhead** has been appointed Philadelphia district sales manager.

F. M. Parsons, who has been associated with the **Kellogg Switchboard & Supply Co.** in various capacities for 15 years, has been appointed sales manager and **C. D. Manning**, general sales manager, has been appointed executive assistant to the president.

H. H. Fuller, New York district sales manager, has been elected vice-president in charge of west coast steel activities of the **Bethlehem Steel Company** to succeed **W. H. Stewart**, who is retiring from active duty but will continue in an advisory and consulting capacity. **C. M. Mackall**, general manager, central sales at Pittsburgh, Pa., will succeed Mr. Fuller as manager of sales, New York district and **Bennett C. Macgregor**, formerly manager of sales, St. Louis, Mo., district, will succeed Mr. Mackall as general manager, central sales. **C. H. Cecil**, a member of the sales force



1869

A HOLE IN A MOUNTAIN

inspired one of the world's most important inventions

The Air Force is today directing a lot of attention to the Mont Cenis Tunnel in Italy. They are bombing it to a standstill, to halt the flow of military supplies.

Three quarters of a century ago, a different kind of "air force" directed a lot of attention to the tunnel. It was the first large engineering project to utilize compressed air to operate rock drills. This successful air application, with the air supply piped for over 3000 feet, fired the imagination of George Westinghouse, and inspired the development of the first air brake.

This first brake in 1869 was the beginning of an uninterrupted evolution, directed toward one goal: to permit trains with heavier loads to move at shorter intervals and higher speeds . . . *safely*. The almost miraculous results are known to every railroad man . . . and the end is not yet!

75 Years of Pioneering

WESTINGHOUSE AIR BRAKE COMPANY, WILMERDING, PA.



1869



1944

TO PERMIT TODAY'S TRAINS TO
MOVE AT SHORTER INTERVALS
WITH HEAVIER LOADS AT HIGHER
SPEEDS—SAFELY.

Operation of today's freights on wartime train schedules brings braking problems undreamed of in the early days. The AB Brake is the answer. It permits smooth control of slack on the longest, heaviest trains; insures positive, sensitive applications; and promotes maximum car utilization. Westinghouse Braking Equipment is always abreast of transportation needs.

in the Chicago district, has been appointed manager of sales at St. Louis.

Arthur D. Foster, Jr., has been elected president of the **McConway & Torley Corp.** to succeed the late Donald Symington. **Austin L. Byrd** has been elected executive vice-president, **Enoch George, Jr.**, vice-president in charge of operations, and **L. A. Townsend**, treasurer of the company. **H. F. Dunbar** will continue as vice-president and sales manager.

James M. Plaskitt, formerly mechanical engineer of the Southern Railway with headquarters at Washington, D. C., has been named regional sales manager in the same city for the **Edw. G. Budd Manufacturing Company**, with offices at 1218 Connecticut avenue, N. W. Mr. Plaskitt will report to Samuel M. Felton, general sales manager of the company's railway division.

Carl J. Dinic has been appointed assistant to the president of the **American Locomotive Company**. Mr. Dinic was graduated from the University of California, and the Harvard Graduate School of Business Administration. He was with United States Steel Corporation for five and a half years and prior thereto was an executive assistant with the Eastern Gas & Fuel Associates, Boston, Mass.

C. G. Green, assistant to the divisional vice-president, locomotive and ordnance division of the **Baldwin Locomotive Works**, has been appointed to supervise the sales and service activities of Baldwin-Westinghouse Diesel locomotives, and **J. G. Broz**, sales manager, Diesel engine section, locomotive and ordnance division of Baldwin, has been appointed in charge of sales of Diesel engines and electric locomotives.

William E. Eppler, senior member of the firm of Eppler & Co., New York, has become a partner of **Peat, Marwick, Mitchell & Co.** Mr. Eppler joined the Atchison, Topeka & Santa Fe at Amarillo, Tex., in 1905 and served as assistant general bookkeeper, statistician and assistant paymaster of the Louisiana & Arkansas from 1908 to 1910, when he was appointed chief clerk to the auditor of the Missouri & North Arkansas. He subsequently was employed with the Texas & Pacific, the St. Louis Iron Mountain & Southern, and the Wichita Falls & Northwestern. He joined the Delaware & Hudson in 1912 and was later appointed comptroller of that railroad. He was a member of the committee representing the railroads before the I.C.C. in reference to the revision of the accounting classifications for steam railroads. He also served as chairman and member of the board of accounting officers of the Trunk Line Association, in connection with railway rates and traffic practices, and was a member and officer of the Railway Accounting Officers' Association. He retired from the Delaware & Hudson in 1928 to head his own accounting organization.

OBITUARY

Arthur P. Hagar, sales representative, northeastern district, for the Safety Car

Heating & Lighting Co., whose death on June 15 was reported in the *Railway Age* of June 24, was graduated from the Stevens Institute of Technology with a degree in mechanical engineering in 1902. During his early career he was employed with the Illinois Steel Corporation at South Chicago, Ill., and with the Rail Joint Company at



Arthur P. Hagar

Troy, N. Y. He joined the Safety Car Heating & Lighting Co in 1908 and was in the engineering department and in charge of marine work for the company from 1908 to 1914. He was also in charge of laboratory and experimental work at the company's former plant at Jersey City, N. J., from 1912 to 1919. He was appointed sales representative of the northeastern district with headquarters in New York in 1919.

Leslie Flood, eastern sales representative of the Oxweld Railroad Service Company in New York, died June 14. He was 54 years of age. Mr. Flood was graduated from Cornell University with a degree in mechanical engineering in 1912. After working as a civil engineer on municipal projects



Leslie Flood

in Chicago, he served as a lieutenant in the United States army engineers in France in 1917 and 1918. Upon his return he joined the sales department of the Oxweld Railroad Service Company, a unit of Union Carbide & Carbon Corporation, and during recent years covered the New England and Middle Atlantic territory.

Financial

ATLANTIC COAST LINE.—Acquisition.—Division 4 of the Interstate Commerce Commission has authorized this road to acquire and operate about 1.8 miles of the line of the Jacksonville, Gainesville & Gulf within the corporate limits of Gainesville, Fla., at a cost of \$40,000, in connection with a project to relocate its line through that city to obtain more suitable operating conditions.

ATLANTIC COAST LINE.—Acquisition of Subsidiary.—Division 4 of the Interstate Commerce Commission has authorized this road to purchase the property of the Washington & Vandemere, which it controls through ownership of stock, and to assume liability in respect of the subsidiary's \$720,000 of first mortgage 4½ per cent bonds. System capital structure will be simplified by elimination of the subsidiary company.

BOSTON & MAINE.—Acquisition of Subsidiary.—Division 4 of the Interstate Commerce Commission has authorized this company to purchase at \$52.64 per share the 79 shares of the capital stock of the Wilton Railroad not already owned by it, and upon consummation of the purchase of the properties of the subsidiary to terminate its existence, thus simplifying the system capital structure.

BOSTON & MAINE.—Acquisition of Subsidiary.—Division 4 of the Interstate Commerce Commission has authorized this company to purchase for \$9,250 the 370 shares of Peterborough Railroad stock not already owned by it, and upon consummation of the purchase of the subsidiary's properties to dissolve the company, thus effecting simplification of the system corporate structure.

CENTRAL OF NEW JERSEY.—Equipment Trust.—Division 4 of the Interstate Commerce Commission has authorized this road and the Central of Pennsylvania (successor to the Easton & Western) all the stock of which is held by the C. of N. J., to assume liability jointly and severally for \$3,720,000 of Central of Pennsylvania equipment trust certificates of 1944, sold at 99.76 to Halsey, Stuart & Co. with a 2¼ per cent dividend rate. The proceeds will be applied to the purchase of equipment detailed in *Railway Age* of June 3, page 1094. It was pointed out that, although the C. of N. J. has net current assets substantially in excess of the cost of the equipment, funds are not available for this purpose because of New Jersey tax liabilities in litigation.

CHESAPEAKE & OHIO.—Equipment Trust Certificates.—This road has applied to the Interstate Commerce Commission for authority to assume liability for \$2,500,000 of equipment trust certificates to be dated July 15 and to mature in 10 annual installments from July 15, 1945, to July 15, 1954. The issue would be sold on the basis of competitive bids, the interest rate not to exceed 2½ per cent and no bid to be less than 99. The proceeds would be used to finance 80 per

cent of the \$3,213,850 cost of 1,250 all-steel hopper cars of 50 tons capacity.

CHICAGO & NORTH WESTERN.—Promissory Notes.—This company has applied to the Interstate Commerce Commission for authority to issue \$366,204 of 1¼ per cent promissory notes in further evidence of indebtedness under conditional sales contracts for the purchase of six Diesel-electric switching locomotives, including two ordered from the American Locomotive Co. and one from the Baldwin Locomotive Works, each of 1,000 hp., and three 44-ton models ordered from the Whitcomb Locomotive Co. This transaction is in addition to the purchase of 27 Diesel-electric switching locomotives under conditional sales agreements and 5 for cash arranged by the trustee of this company's predecessor before the reorganization was completed, as noted in *Railway Age* of March 25, page 622. The application indicated that purchase of a 2,000-hp. Diesel-electric road locomotive, approved by the court before reorganization was completed, would have to be deferred because of inability to secure delivery. The additional issue of notes has been sold through competitive bidding to the Continental Illinois National Bank & Trust Co.

DULUTH, SOUTH SHORE & ATLANTIC.—Reorganization.—The committee representing this road's first mortgage 5 per cent gold bonds has submitted to the Interstate Commerce Commission a plan of reorganization requiring payment in full of all claims of the bondholders before any provision is made for the equity of the Canadian Pacific, or for unsecured creditors. The new company's capitalization, under this plan, would include \$3,000,000 of first mortgage 4 per cent bonds and \$2,000,000 of second mortgage 4½ per cent income bonds, as well as common stock and equipment obligations, and the old company's common and preferred stocks would be found of no value.

ILLINOIS CENTRAL.—Modification of Leases.—Division 4 of the Interstate Commerce Commission has approved revised terms of the leases under which this company operates the properties of the Chicago, St. Louis & New Orleans to meet the commission's depreciation accounting requirements.

ILLINOIS CENTRAL.—Joint Mortgage Bonds.—This company and the Chicago, St. Louis & New Orleans, which it controls, have applied to the Interstate Commerce Commission for authority to issue \$8,700,000 of joint first refunding mortgage 4 per cent bonds, series D, which are to be exchanged for a like amount of Illinois Central leased line 4 per cent stock certificates, thus substituting an obligation of definite maturity for an indefinite one. In this connection, it is proposed to cancel \$1,289,700 of this issue of leased line stock certificates already acquired by the I. C., effecting a reduction in interest charges to that extent.

ILLINOIS CENTRAL.—Approval of Leases.—Division 4 of the Interstate Commerce Commission has approved a modification of the terms of this company's lease of the property of the Canton, Aberdeen & Nash-

ville making the commission's current depreciation accounting requirements effective. The division at the same time approved the provisions of leases under which this company operates the following subsidiaries, all of which it controls through stock ownership, either direct or through other subsidiaries: the Benton Southern; Bloomington Southern; Blue Island; Fredonia & Reeds; Herrin Northern; Omaha Bridge & Terminal; St. Louis Belleville & Southern; South Chicago; and Golconda Northern.

INTERSTATE.—Promissory Notes.—This road has applied to the Interstate Commerce Commission for authority to issue 2¼ per cent promissory notes in the amount of \$1,000,000, the issue to consist of 20 notes of \$50,000 each payable semi-annually over a 10-year period. The notes would be delivered to J. P. Morgan & Co., Inc., as evidence of a loan made to finance in part the construction of 1,000 steel coal cars to be built for the applicant by the Norfolk & Western on second-hand side-frame trucks furnished by the applicant. Including allowance for the latter, the equipment would cost about \$1,700,000 of which \$1,273,000 would go for new material. The application states that the notes would be issued directly to J. P. Morgan & Co., and "no financing cost or expense is involved."

SEABOARD AIR LINE.—Equipment Trust Certificates.—This road has applied to the Interstate Commerce Commission for authority to assume liability for \$2,760,000 of equipment trust certificates, series MM, to finance in part the acquisition of equipment expected to cost a total of \$3,732,220—five Diesel-electric freight locomotives, 200 all-steel, 50-ton box cars, and 200 all-steel, 70-ton hopper cars. The issue would be sold under competitive bidding arrangements with the interest rate determined by the bidding. The certificates would be dated July 1, 1944, and mature semi-annually on January 1 and July 1 of each year from 1945 to 1959.

WESTERN PACIFIC.—Annual Report.—The 1943 annual report of this road shows a net income, after interest and other fixed charges, of \$15,205,421, as compared with a net income of \$5,799,508 in 1942. Selected items from the income statement follow:

	1943	Increase or Decrease Compared With 1942
Average Mileage Operated	1,194.6
RAILWAY OPERATING REVENUES	\$50,360,509	+\$11,823,189
Maintenance of way and structures	5,798,807	+1,684,818
Maintenance of equipment	6,053,104	+1,197,613
Transportation rail line	13,458,621	+1,946,325
TOTAL OPERATING EXPENSES	27,814,664	+5,387,228
Operating ratio	55.23	-2.97
NET REVENUE FROM OPERATIONS	22,545,845	+6,435,961
Railway tax accruals	2,246,702	-2,939,376
RAILWAY OPERATING INCOME	20,299,142	+9,375,338
Hire of equipment		
—Net Dr.	1,975,514	+40,866
Joint facility rents		
—Net Cr.	107,789	-11,107
NET RAILWAY OPERATING INCOME	18,431,417	+9,323,365
Total other income	430,261	+72,503

TOTAL INCOME	18,861,678	+9,395,88
Rents for leased roads and equipment	10,928	+7,328
Interest on funded debt	3,389,053	-7,860
TOTAL FIXED CHARGES	3,541,175	-5,088
INCOME AFTER FIXED CHARGES TRANSFERRED TO PROFIT AND LOSS	15,205,421	+9,405,914

UNION PACIFIC.—Equipment Trust Certificates.—This road has applied to the Interstate Commerce Commission for authority to assume liability for \$8,120,000 of equipment trust certificates to finance in part the purchase of 35 locomotives and 100 cabooses at a total cost of \$10,150,000. The former includes 25 freight locomotives (20 of the 4-6-6-4 type and five of the 4-8-8-4 type), and 10 freight and passenger locomotives of the 4-8-4 type. The certificates, bearing interest at a rate of 1¼ per cent, would be sold on the basis of competitive bids. They would be dated August 1, and would mature in 10 installments from August 1, 1945, to August 1, 1954.

Average Prices Stocks and Bonds

	July 5	Last Week	Last Year
Average price of 20 representative railway stocks..	42.17	41.88	37.90
Average price of 20 representative railway bonds..	89.31	89.10	79.83

Dividends Declared

Atchison, Topeka & Santa Fe.—\$1.50, payable September 1 to holders of record July 28.
 Lake Superior & Ishpeming.—50c, payable June 27 to holders of record June 23.
 Norfolk & Western.—\$2.50, quarterly, payable September 9 to holders of record August 22; Adjustment preferred, \$1.00, quarterly, payable August 10 to holders of record July 22.
 Paterson & Hudson.—\$1.00, payable July 15 to holders of record July 10.
 Pittsburgh, Cincinnati, Chicago & St. Louis.—\$2.50, semi-annually, payable July 20 to holders of record July 10.
 Reading.—Common, 25c, quarterly, payable August 10 to holders of record July 13; 4% non-cum. 1st preferred and 2nd preferred, both 50c, both quarterly, payable September 14 and October 12 respectively to holders of record August 24 and September 21 respectively.
 Stony Brook.—\$2.50, semi-annually, payable July 5 to holders of record June 30.
 Tennessee Central.—7% preferred (accum.), \$7.00, payable June 30 to holders of record June 23.

Abandonments

ATLANTIC COAST LINE.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon 2.09 miles of its line within the corporate limits of Gainesville, Fla., on which operations have been hazardous and unsatisfactory, since an alternate line will be made available through the acquisition of a segment of the Jacksonville, Gainesville & Gulf line and the construction of connecting trackage.

CHESAPEAKE & OHIO.—Division 4 of the Interstate Commerce Commission has authorized this company to abandon its 1.4-mile Rock Lick subdivision, extending northeast from Rock Lick Junction, W. Va., pointing out that about 3150 ft. of the line will be retained as a spur.

NEW YORK CENTRAL.—This company has applied to the Interstate Commerce Commission for authority to abandon part of a branch line from Limerick, N. Y., to Cape Vincent, 15.75 miles.

BALDWIN means locomotives

...but it means a lot more too

Baldwin's long record as a builder of locomotives—steam, diesel-electric and electric—is well known.

But, Baldwin also offers many other services to the railroads. One example is the track scale test car used by many railroads to check the accuracy of track scales at all points along the line, thus assuring uniformity in the weighing of cars. Made in weights of 50,000, 80,000 and 100,000 pounds, Baldwin track scale test cars conform in every respect to those used by the Bureau of Standards.

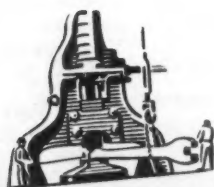
Steel forgings and castings, rolled steel tires and wheels, plate planers, bending rolls, testing equipment—these are a few of the other Baldwin products which are important in the railroad field.

*Baldwin 80,000 pound
track scale test car.*

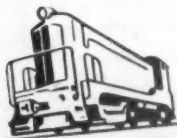


BALDWIN PRODUCTS FOR THE RAILROADS

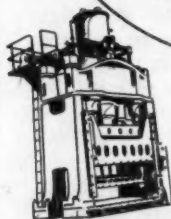
Steam, diesel-electric and electric locomotives, Diesel engines, Hydraulic presses, Special railroad shop equipment, Testing machines and instruments, Steel tires and rolled steel wheels, Crane wheels, Connecting rods and other steel forgings, Steel castings, Springs, Metal plate fabrication, Boilers, Non-ferrous castings, Bending rolls, Plate planers, Dynamometer cars.



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BALDWIN SERVES THE NATION WHICH THE RAILROADS HELPED TO BUILD

Railway Officers

EXECUTIVE

Charles A. Gill has resigned from his position as vice-president in charge of operation and maintenance of the Reading.

J. W. Bahen, chief clerk of the assistant to the president of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Cleveland, Ohio, has been appointed assistant to the vice-president of the Chesapeake & Ohio, with the same headquarters.

C. W. Pflager, mechanical superintendent of the Pullman Company, with headquarters at Chicago, has been promoted to assistant vice-president, with the same headquarters. Mr. Pflager was born at St. Louis, Mo., and went with the Pullman Company in 1893 as a draftsman, with headquarters at St. Louis. In 1895 he was transferred to Chicago where he held several



C. W. Pflager

supervisory positions in the mechanical and repair departments. In 1918 he was promoted to the position he held at the time of his new appointment.

John H. Keefe, president of the Santa Fe Land Improvement Company and other non-carrier affiliates of the Atchison, Topeka & Santa Fe, has been elected a vice-president of the Santa Fe. Mr. Keefe was born at Raub, Benton County, Ind., on August 20, 1880, and was educated at St. Mary's University, Galveston, Tex. He entered Santa Fe service November 1, 1896, as an office boy and messenger in the general superintendent's office at Galveston, subsequently serving in various clerical positions and as a stenographer until August 1, 1902, when he was promoted to chief clerk. On September 1, 1905, he was advanced to assistant to the second vice-president and general manager of the Gulf Lines, at Galveston, and on May 1, 1911, was promoted to assistant general manager, which position he retained until June 30, 1918. During this period he also served as vice-president and general manager of the Texas and Gulf Railway (part of the Santa Fe system) at Galveston from April 10,

1906, to July 15, 1910, and as president of the same road from the latter date to November 20, 1914. During the first six months of 1918, Mr. Keefe assisted in the organization of the Division of Operations of the country's railroads, then under Federal con-



John H. Keefe

trol, and also served as assistant director of this division of the U. S. Railroad Administration, Washington, D. C. from July 1, 1918, to February 1, 1919, under leave of absence from the Santa Fe. He returned to the Santa Fe as assistant to the vice-president with headquarters at Chicago, which position he retained until he became president of the Santa Fe Land Improvement Company February 14, 1921.

Gerald E. Duffy, assistant to the president of the Atchison, Topeka & Santa Fe, with headquarters at San Francisco, Cal., has been promoted to assistant vice-president in charge of traffic, with headquarters at Chicago. **R. G. Rydin**, assistant to the president at Chicago, has been advanced to executive representative, with headquarters at San Francisco, succeeding to the duties of Mr. Duffy, and **E. S. Marsh**, chief clerk of the president's office at San Fran-



Gerald E. Duffy

cisco, has been promoted to assistant to the president, with headquarters at Chicago, replacing Mr. Rydin.

Mr. Duffy was born at Binghamton, N. Y., on June 16, 1898, and entered railway service in 1915 as a stenographer of the Delaware, Lackawanna & Western, later serving as a stenographer on the Erie at Scrant-

on, Pa. In 1918, he entered Case University at Cleveland, Ohio, and six months later, transferred to George Washington University, Washington, D. C., where he worked for the U. S. Railroad Administration while attending the university. He then became secretary to W. L. McNenimen, member, U. S. Railroad Labor Board at Chicago, where he obtained his law degree from the Kent College of Law in 1921. Mr. Duffy entered the service of the Santa Fe in 1924 as an attorney at Chicago and in 1929 he was promoted to commerce attorney. In 1930 he was transferred to San Francisco, and in April, 1942, he was promoted to the position he held at the time of his new appointment.

Mr. Rydin was born at Chicago and attended Northwestern University night school. He began his railroad career in 1916 as a clerk in the office of the president of the Santa Fe. From 1920 to 1924 he was secretary to the president and was later made assistant chief clerk in the president's office. He was appointed chief



R. G. Rydin

clerk in 1937, and in September, 1942, he was promoted to the position he held at the time of his new appointment.

FINANCIAL, LEGAL AND ACCOUNTING

Forrest Boecker has been appointed attorney of the Wabash, with headquarters at St. Louis, Mo.

OPERATING

In keeping with the intensification of the safety program of the Atchison, Topeka & Santa Fe, **S. C. Flagler**, supervisor of safety on the Gulf and Eastern lines, has been placed in charge of newly-instituted safety activities at Albuquerque, N. M. His territory embraces part of the Western and Coast lines including the Western Colorado, New Mexico, Albuquerque and Arizona division. At the same time, **A. N. Baker**, supervisor of the Western lines with headquarters at Amarillo, Tex., has been assigned to the territory of the Panhandle, Plains, Saton and Pecos divisions.

W. E. Robinson has been appointed general superintendent, Northern Ontario district of the Canadian National, with headquarters at North Bay, succeeding **F. Grif-**

fin, who has been transferred to the Quebec district in that capacity. Mr. Griffin succeeds **O. Masse**, who has been named general superintendent of transportation, central region, at Toronto, Ont., to replace **J. A. Rogers**, newly appointed assistant general manager, central region, with the same headquarters. **A. J. Lomas** has been appointed general superintendent, Montreal district, at Montreal, succeeding **R. C. Johnston**, transferred to the Southern Ontario district succeeding **G. A. Stokes**, who has retired. **W. G. Doherty** has been named superintendent of terminals, Black Rock, Ont., to succeed **J. B. Currah**, who has been transferred to Toronto with the same position, replacing Mr. Lomas. **J. G. G. Gordon** succeeds Mr. Doherty as superintendent of transportation, Southern Ontario district. **C. I. Warren** becomes superintendent, Hornpayne district at Hornpayne, Ont., to succeed **A. B. Saunders**, transferred to the St. Thomas division, replacing **R. Hayes**, who in turn has been transferred to the Ottawa division as superintendent.

V. M. Petterson, whose promotion to superintendent of the Salt Lake division of the Southern Pacific with headquarters at Ogden, Utah, was reported in the *Railway Age* of July 1, started with the Southern Pacific in 1916 as a timekeeper on the Portland division and after serving with the Army in World War I, was a clerk, car distributor, assistant trainmaster and trainmaster on the same division. He was later transferred to the Western division



V. M. Petterson

which position he held until 1942 when he was promoted to assistant superintendent of the Sacramento division. In April, 1943, he was promoted to assistant to the general manager.

Fred H. Hooper, whose promotion to general manager of the Kansas City Southern and the Louisiana & Arkansas, with headquarters at Kansas City, Mo., was reported in the *Railway Age* of June 24, was born at Walnut, Kan., on November 15, 1885, and entered railway service on January 27, 1902, as a telegrapher of the K. C. S. He subsequently served as chief dispatcher, trainmaster and assistant to the general superintendent of transportation until January, 1925, when he was promoted to superintendent of car service, with headquarters at Shreveport, La. In June, 1937, Mr. Hooper

was advanced to superintendent of the Southern division, with headquarters at Shreveport, and in October, 1941, he was promoted to assistant to the president at Kansas City. In October, 1942, he was further advanced to assistant general superintendent of transportation of both roads, with headquarters at Shreveport, and in September, 1943, he was promoted to superintendent of transportation, with the same headquarters, the position he held at the time of his new appointment.

James T. McCorkle, whose promotion to general superintendent of transportation of the Kansas City Southern and the Louisi-



James T. McCorkle

ana & Arkansas, with headquarters at Shreveport, La., was reported in the *Railway Age* of June 24, was born at Little Rock, Ark., on September 5, 1888, and entered railway service in June, 1905, as a machinist apprentice of the Southern at Atlanta, Ga. In 1907 he went with the Louisville & Nashville, working as a brakeman and conductor at Etowah, Tenn. He later served in similar capacities with the Atchison, Topeka & Santa Fe, and the Union Pacific. In 1919 Mr. McCorkle became a switchman of the Missouri-Kansas-Texas, with headquarters at Kansas City, Kan., and one year later he went with the Kansas City Southern, subsequently serving as yardmaster, assistant general yardmaster, general yardmaster, assistant superintendent of terminals and superintendent of terminals at Kansas City, remaining in the latter position until his new appointment.

Charles A. Skog, freight traffic manager of the Grand Trunk Western with headquarters at Chicago, has been promoted to general manager with headquarters at Detroit, Mich., to succeed **W. J. Hogan** deceased. **Walter H. Edmondson**, general superintendent at Detroit, has been promoted to assistant general manager.

Mr. Skog was born in Eau Claire, Wis., and began his railway career as a clerk with the Canadian Northern in Winnipeg, Man., in 1912. In the following year he was appointed chief clerk at Duluth, Minn., and three years later commercial agent at Minneapolis, Minn. In 1917, he was named division and passenger agent at Duluth, and, in 1927, became assistant general freight agent of the Grand Trunk-Canadian National. In 1930, he was promoted to general

freight agent and in 1943 to freight traffic manager.

Mr. Edmondson began work with the Grand Trunk at Detroit in January, 1904, as a messenger in the transportation department and advanced through various departmental offices at Chicago, Battle Creek, Mich., and Detroit, where in 1918 he became chief clerk in the general manager's office. He was promoted to assistant to the Federal manager during the United States Railroad Administration and on return of the property to the company he became assistant to the general manager. In 1932 Mr. Edmondson was appointed office assistant to the vice-president and general manager at Detroit and held this position until 1939 when he became divisional superintendent at Battle Creek. In June, 1942, he was promoted to general superintendent with jurisdiction over all Grand Trunk Western lines.

TRAFFIC

Edward L. Pardee, whose promotion to passenger traffic manager of the Chicago & North Western, with headquarters at Chicago, was reported in the *Railway Age* of July 1, was born at Kilbourn, Wis., on December 19, 1877, and entered railway service in February, 1896, as an office boy of the Chicago, St. Paul, Minneapolis & Omaha (part of the North Western System). He subsequently served as stenographer, clerk and advertising clerk until March 1, 1905,



Edward L. Pardee

when he was promoted to traveling passenger agent, with headquarters at St. Paul, Minn. In July, 1911, Mr. Pardee was advanced to assistant general passenger agent at St. Paul, and in March, 1928, he was further advanced to general passenger agent. One year later he was promoted to passenger traffic manager, with headquarters at St. Paul, holding that position until his new appointment.

William K. Martin, general agent of the Delaware, Lackawanna & Western, has been advanced to the position of assistant general freight agent, with headquarters as before at New York, succeeding **William J. Gemeiner**, who has retired under company pension rules after 45 years of service. **Harry F. Doyle**, general agent at Cincinnati, Ohio, has been transferred to New York, succeeding Mr. Martin. **H. Russell O'Hara**, general agent at Albany, N. Y.,

has been transferred to Cincinnati to succeed Mr. Doyle, and **Grover C. Howe**, of the western freight traffic office at Chicago, in charge of the Iowa territory, has been appointed general agent, succeeding Mr. O'Hara at Albany.

Norman F. Cuthriell, general agent, traffic and transportation, of the Virginian, has been appointed coal freight agent of that road at New York. Mr. Cuthriell is



Norman F. Cuthriell

succeeded by **A. E. Suter**, former traveling coal agent, as general agent, traffic and transportation, with headquarters at Beckley, W. Va. Mr. Cuthriell, who was born at Portsmouth, Va., on September 10, 1899, entered the service of the Virginian on October 1, 1914, as clerk in the car accountant's office at Norfolk, Va. On November 1, 1922, he was promoted to the position of chief clerk, and on April 1, 1935, he became traveling coal agent. On September 1, 1938, Mr. Cuthriell was named general agent, traffic and transportation, at Beckley, W. Va., in which capacity he served until his present appointment as coal freight agent at New York.

Robert Thomson, passenger traffic manager of the Chicago & North Western, with headquarters at Chicago, has retired after 54 years service. Mr. Thomson was born



Robert Thomson

on May 15, 1876, at Edinburgh, Scotland, and was educated in the public schools of that country. His first railway experience was with the passenger traffic department of the Chicago & Grand Trunk (now part

of the Grand Trunk Western), with which he became connected in 1890. After nine years with this company, he entered the service of the North Western as a rate clerk at Chicago, later being advanced to chief rate clerk at that point. In 1914, Mr. Thomson was promoted to assistant general passenger agent, with headquarters at Chicago, on March 1, 1928, he was further advanced to assistant passenger traffic manager, and in June, 1932, he was promoted to the position he held at the time of his retirement. In 1940 Mr. Thomson was elected president of the American Association of Passenger Traffic Officers.

G. E. Boulineau, freight traffic manager of the Atlanta & West Point, the Western of Alabama, and the Georgia Central, has been appointed traffic manager, with jurisdiction over freight and passenger departments, and headquarters at Atlanta, Ga. Mr. Boulineau's former position has been abolished.

F. W. Werner, commercial agent of the Chicago, Burlington & Quincy at Kansas City, Mo., has been promoted to general agent, with headquarters at Peoria, Ill., succeeding **W. A. Stingley**, whose death on May 20 was reported in the *Railway Age* of June 24.

Harold W. Sweigart, district passenger agent of the Chicago, Rock Island & Pacific, with headquarters at Buffalo, N. Y., has been appointed district freight and passenger agent at Philadelphia, Pa., to succeed **Lincoln Burgher**, resigned, and has been succeeded by **Harry Grosch**, traveling passenger agent.

ENGINEERING & SIGNALING

H. W. Flemming has been appointed district engineer of the Canadian National's Northern Ontario district, succeeding **C. H. N. Connell**, who has retired.

C. H. Fox, District engineer of the Saskatchewan district of the Canadian Pacific, with headquarters at Moose Jaw, Sask., has been transferred to the Manitoba district, with headquarters at Winnipeg, Man., and has been succeeded by **G. B. Alexander**, division engineer, at Vancouver.

Phillip R. Elfstrom, assistant chief engineer of the Chicago, Aurora & Elgin and the Chicago, North Shore & Milwaukee has been promoted to general manager in charge of operations of the Aurora and has resigned from the position held on the North Shore.

Frank J. Jerome, chief engineer of the New York Central System west of Buffalo, including the Michigan Central and the Cleveland, Cincinnati, Chicago & St. Louis (Big Four), with headquarters at Chicago, has also been appointed chief engineer of the Indiana Harbor Belt, the Chicago Junction and the Chicago River & Indiana, with the same headquarters, succeeding **Otto Gersbach**, who has retired after 54 years' service.

Mr. Gersbach was born at Montezuma, Iowa, on August 24, 1876, and graduated from Iowa State College in 1897. He entered railway service in the same year with the Iowa Central (now the Minneapolis &

St. Louis), and in 1902 he went with the Indiana Harbor (now the Indiana Harbor Belt), in charge of track elevation. In 1907 Mr. Gersbach went with the Indiana & Southern (now the New York Central), on construction of bridges on the Kankakee division, with headquarters at Chicago, and three years later he became engineer maintenance of way of the Indiana Harbor Belt. In 1918 he was promoted to chief engineer, with headquarters at Gibson, Ind., and in 1922 he was also appointed chief engineer of the Chicago Junction and the Chicago River & Indiana, with headquarters at Chicago. From February, 1933, to November, 1937, Mr. Gersbach served also as chief engineer of the Western division of the New York Central, and West division of the Michigan Central.

MECHANICAL

J. D. White, machinist, has been appointed mechanical inspector of the Canadian National, Atlantic region, with headquarters at Moncton, N. B.

E. C. Ellis, supervisor passenger car maintenance and inspection of the Chesapeake & Ohio at Richmond, Va., has been named superintendent car department, same headquarters, succeeding **Paul Maddox**, deceased.

D. Marshall, assistant to the master car builder of the Central of Georgia, has been appointed general car inspector, with headquarters at Savannah, Ga. **H. Hawthorn**, shop engineer, has been named mechanical engineer at Savannah, and **C. O. Johnson**, chemist, has been appointed assistant mechanical engineer.

J. E. Hunter, assistant master mechanic of the Chicago & North Western, with headquarters at Madison, Wis., has been appointed master mechanic of the Madison division, including the Milwaukee terminal, with headquarters at Milwaukee, Wis., **F. L. Baker**, master mechanic of the Wisconsin division with headquarters at Chicago, having been relieved of jurisdiction on the Madison division including the Milwaukee terminal.

SPECIAL

Cecil H. Taylor has been appointed advertising manager of the Kansas City Southern and the Louisiana & Arkansas, with headquarters at Kansas City, Mo.

OBITUARY

Paul Maddox, superintendent, car department of the Chesapeake & Ohio at Richmond, Va., whose death on June 13 was reported in the *Railway Age* of June 24, was born on October 10, 1885, at Bumpass, Va. Mr. Maddox entered railroad service as a car carpenter of the Chesapeake & Ohio in 1903, serving in that capacity until 1906 when he became chief M.C.B. clerk. In 1911 he was appointed foreman, car repairs, becoming equipment inspector in 1913. From 1917 to 1918 Mr. Maddox was employed in the valuation department, and in the latter year was appointed general car inspector. He has been serving as superintendent, car department, since 1923.

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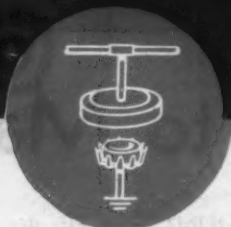
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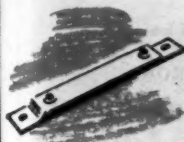
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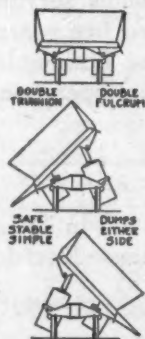
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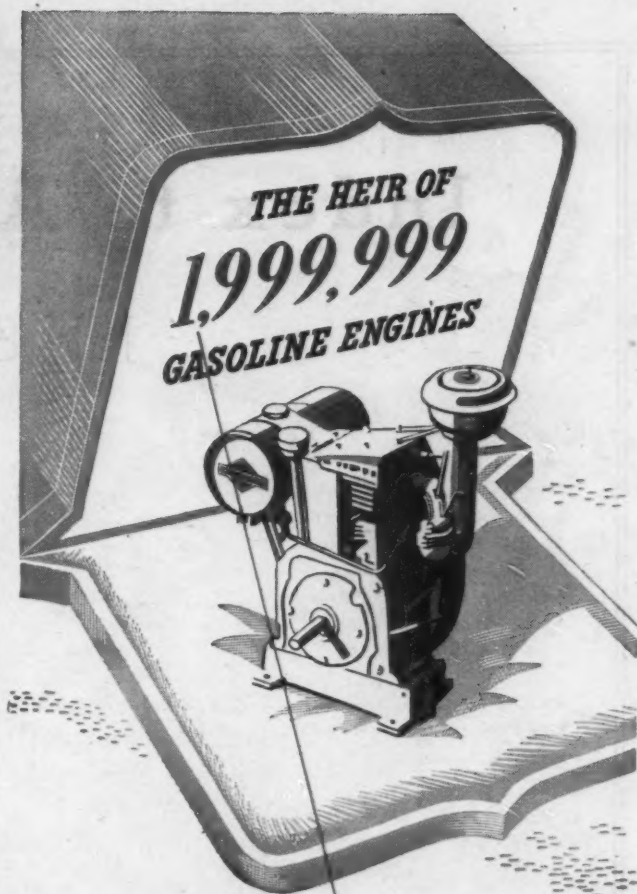
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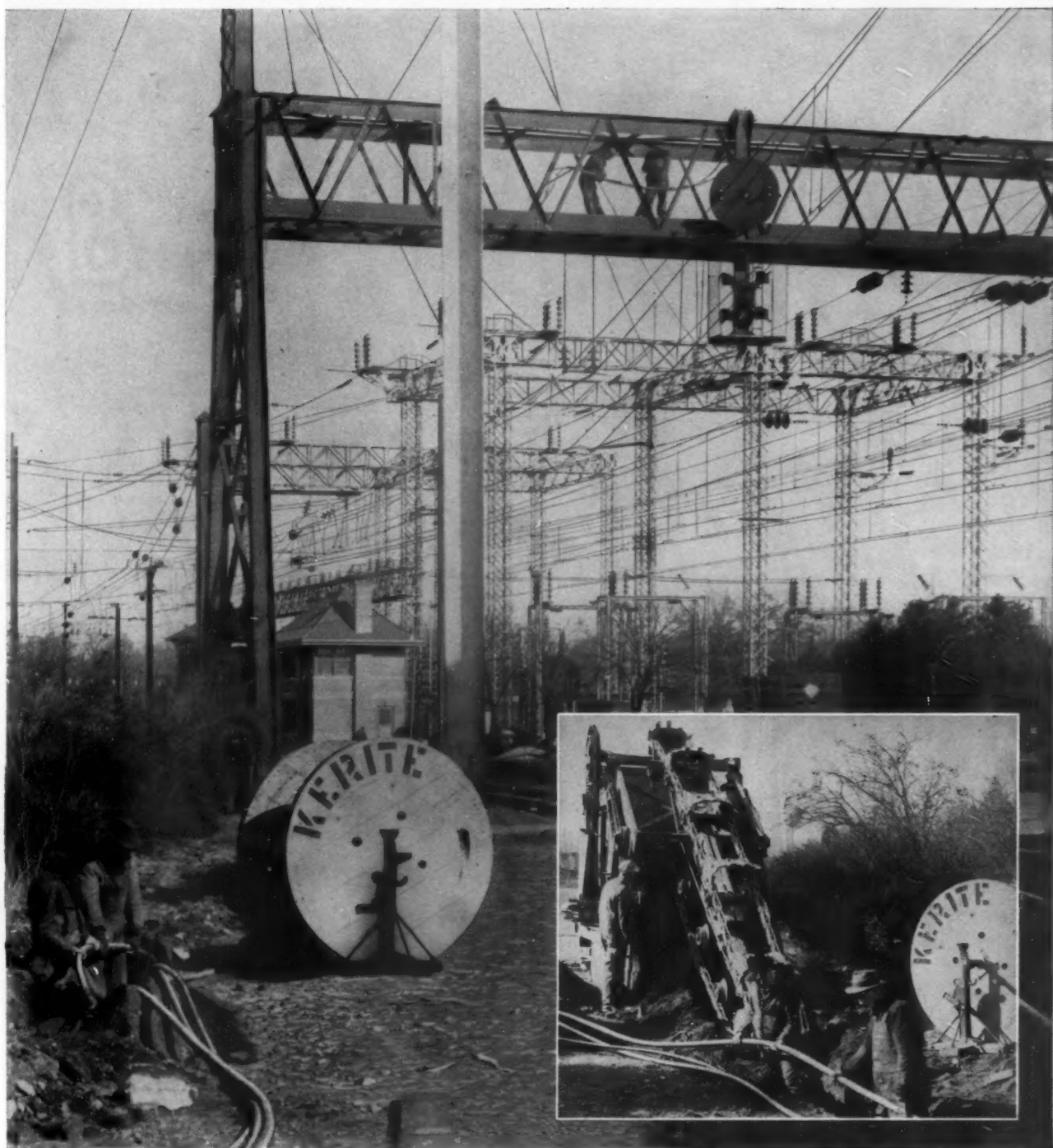
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The essence of carrying out this policy has been the strategic location of competent service assistance and replacement parts so as to make the maximum contribution to availability of General Motors Diesel locomotives and Electro-Motive rail cars. The railroad industry is familiar with the present locations of eight parts warehouses within easy access of all our equipment in service.

Now comes a major new step in furtherance of this policy—

Decentralization of Service and Parts supervision. Separate Service and Parts departments have been created at headquarters in La Grange, Illinois, with H. B. Ellis, formerly Service Manager, as Director of Service and Parts. Mr. Ellis has separated these two functions, appointing D. H. Queeney as Service Manager and W. D. Davis as Manager, Parts Division.

Mr. Queeney has divided the country into three service regions. C. L. Olsen is Field Manager Eastern Region, Service Division, with headquarters at Suite 3317, 230 Park Avenue, New York 17, N. Y. Thorwald O. Robertson is Field Manager Western Region, Service Division, with headquarters at 276 Twickenham Avenue, Los Angeles 22, California. The Central Region for the present will be directed from the plant at La Grange, Illinois.

The move is in step with the rapid growth of the installation of General Motors locomotives, which necessitates expansion of Service and Parts as well as manufacturing facilities.

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